SANYO

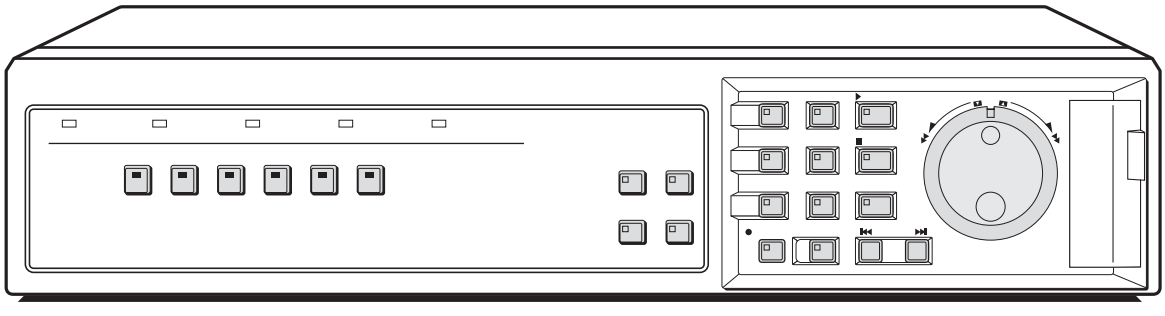
INSTRUCTION MANUAL

DSR-3506P

Digital Video Recorder with Multiplexer Function

About this manual

Before installing and using this unit,
please read this manual carefully.
Be sure to keep it handy for later reference.



PRECAUTION

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.
To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only.
If the power supply cord (AC power cord) of this appliance is damaged, it must be replaced. Return to a SANYO Authorised Service Centre for replacement of the cord.

Location

For safe operation and satisfactory performance of your unit, keep the following in mind when selecting a place for its installation:
Shield it from direct sunlight and keep it away from sources of intense heat.
Avoid dusty or humid places.
Avoid places with insufficient ventilation for proper heat dissipation. Do not block the ventilation holes at the top and bottom of the unit. Do not place the unit on a carpet because this will block the ventilation holes.
Install the unit in a horizontal position only.
Avoid locations subject to strong vibrations.
Avoid moving the unit between cold and hot locations.
Do not place the unit directly on top of a monitor TV, as this may cause playback or recording problems.

Avoiding Electrical Shock and Fire

Do not handle the power cord with wet hands.
Do not pull on the power cord when disconnecting it from an AC wall outlet. Grasp it by the plug.
If any liquid is spilled on the unit, unplug the power cord immediately and have the unit inspected at a factory-authorised service centre.
Do not place anything directly on top of this unit.

SERVICE

This unit is a precision instruments and if treated with care, will provide years of satisfactory performance. However, in the event of a problem, the owner is advised not to attempt to make repairs or open the cabinet. Servicing should always be referred to your dealer or Sanyo Authorized Service Centre.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacture's instructions.

INTRODUCTION

Main features

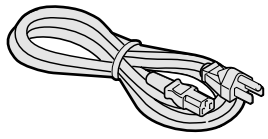
- **The digital video recorder records video from monitoring cameras to its internal hard disk, it can display the video being displayed on a monitor split into four or six screens, and it can also display recorded video in the same way.**
- **Integrated 80 GB hard disk**

  Separately-sold hard disks (80, 160, 250, or 300 GB) can be installed to further increase this large memory capacity.
- **Complete range of recording and playback functions**
  - Simultaneous recording and playback of video.
  - Timer recording allows recordings to be made at different times each day.
  - Zoom allows a certain section of playback video to be magnified.
  - Recording and playback of audio.
  - Alarm recording allows the actions of intruders to be recorded.
  - Pre-alarm recording allows you to record video from up to 15 minutes ahead of an alarm.
  - The video from specific cameras can be masked using a gray pattern to prevent it being monitored.
  - Motion sensing can be used with each camera, and alarms can be setup to give priority to the recording of moving images.
- **Search function - lets you instantly display the desired recording. (→P.26)**
  - Searching in order of alarm occurrence
  - Searching by thumbnail using alarm search
  - Searching by date/time
  - Searching within the archive area
  - Searching for intruder motion using motion detection search
- **Two-level security lock function - lets you restrict users for data and equipment management. (→P.79)**
- **Expandable, can be connected to a PC**
  - Recorded video can be copied to CompactFlash cards.
  - A built-in LAN terminal provides support for network control, thus facilitating live monitoring, playback, searches, and menu setting.
  - Monitoring can be carried out on two different monitor screens - namely, the main monitor and monitor 2. In addition, the main monitor can be viewed in split-screen mode while the monitor 2 is used for full screen viewing or automatic camera selection.

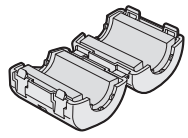
Accessories

Check that you have all the parts shown below.

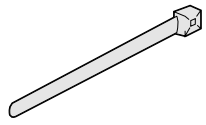
Power cord



Core clamp (1) (for the microphone cable)



Power cord tie



Instruction Manual (DVR)
Manual for Remote Operation by Network Connection
Quick Guide

Symbols used in this manual

NOTE ▶ Information describing operation methods or how to get the most out of functions.

CAUTION Information describing the correct use of the digital video recorder.

(P. xx) indicates the page to be referred to.

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Notes on handling the internal HDD

This digital video recorder uses an internal hard disk drive (HDD).
Be sure to observe the following points carefully when operating, setting-up, or servicing the digital video recorder.

■ Do not subject the digital video recorder to sudden impact or vibration.

If the digital video recorder is subjected to sudden impact or vibration, it may damage the HDD or cause corruption of the data stored within it.

- Do not move the digital video recorder while the power is turned on. Always ensure that the power is turned off before removing the digital video recorder from or placing it in a rack.
- When transporting the digital video recorder, pack it securely using the specified materials. In addition, choose a method of transportation that minimizes vibration.
- When placing the digital video recorder on the floor or another similar surface, attach the specified pads to its base and place it down gently.

■ Do not move the digital video recorder for 30 seconds after turning off the power.

After the power is turned off, the disk inside the HDD will continue to spin for a brief period due to inertia, and the heads will be in an unstable condition.
During this period, the digital video recorder is even more susceptible to damage from sudden impact and vibration than when it is turned on. Make sure that the digital video recorder is not subjected to even gentle vibration for at least 30 seconds after turning off the power.

■ Do not operate the digital video recorder when condensation has formed on it.

If the digital video recorder is operated in this type of condition, there is a possibility that it will be permanently damaged.
If the temperature around the digital video recorder changes suddenly, wait for it to stabilize before operating the digital video recorder.

■ Notes on replacing the HDD

Be sure to follow the correct procedure when replacing the HDD.

- HDDs that have been removed from their packing may not operate correctly if they are subjected to sudden impact or vibration. It is recommended that you place the HDD on a soft, level surface with the printed circuit board facing upward after it has been unpacked.
- Take care to avoid subjecting the HDD to sudden impact or vibration when removing and tightening screws as part of the HDD replacement procedure. Tighten all screws securely to ensure that they do not loosen.
  The HDD is sensitive to static electricity; accordingly, you should take the appropriate precautions to prevent the buildup of static charges.

■ Handling a detached HDD unit

If transporting or storing the HDD unit in a detached condition, be sure to first of all pack it using the specified materials.
In addition, choose a method of transportation that minimizes vibration.

Notes on installation locations

The hard disk is sensitive to dust, sudden impact, and vibration; furthermore, it should not be used near magnetic objects. The following precautions should be observed in order to prevent the loss of recorded data:

- Do not subject the digital video recorder to sudden impact.
- Do not use the digital video recorder on a vibrating or unstable surface.
- Do not disconnect the power plug from the wall outlet during recording or playback.
- Do not use the digital video recorder in areas with extreme temperature changes (i.e., 10ºC or more per hour).
- Condensation may occur if the digital video recorder is moved to an area with a significantly different temperature or high humidity. If the digital video recorder is used while condensation is present inside it, operating problems may occur.
- Do not install the digital video recorder inside motor vehicles, trains, or other areas under constant vibration.
- The digital video recorder has ventilation holes on its left, rear, and bottom panels. Ensure that these holes are not blocked after installation.
- Do not use the digital video recorder in a bookshelf, box, or any other area with poor ventilation.
- This digital video recorder is designed for use in a horizontal orientation, and vertical setup may result in malfunction.
- When installing the digital video recorder in a rack, ensure that a gap of at least 5 cm is provided at the top and bottom.

The hard disk and cooling fan are consumable components.

If used in an ambient temperature of 25ºC, the hard disk should generally be replaced after 2 years; and the cooling fan after 3 years. These figures are intended as a general guideline only and should not be taken as a guarantee of component performance.
The POWER indicator will flash if a problem occurs with the hard disk or fan. (→P.7)

Important recordings

- Always perform test recording in advance to confirm whether the digital video recorder's playback is normal.
- Note that Sanyo will accept no responsibility for losses occurring as a result of recording or playback problems caused by malfunction of this digital video recorder or any connected devices.
- As a precaution against malfunction or accidents, it is advisable to periodically back up important recordings or to perform mirroring.

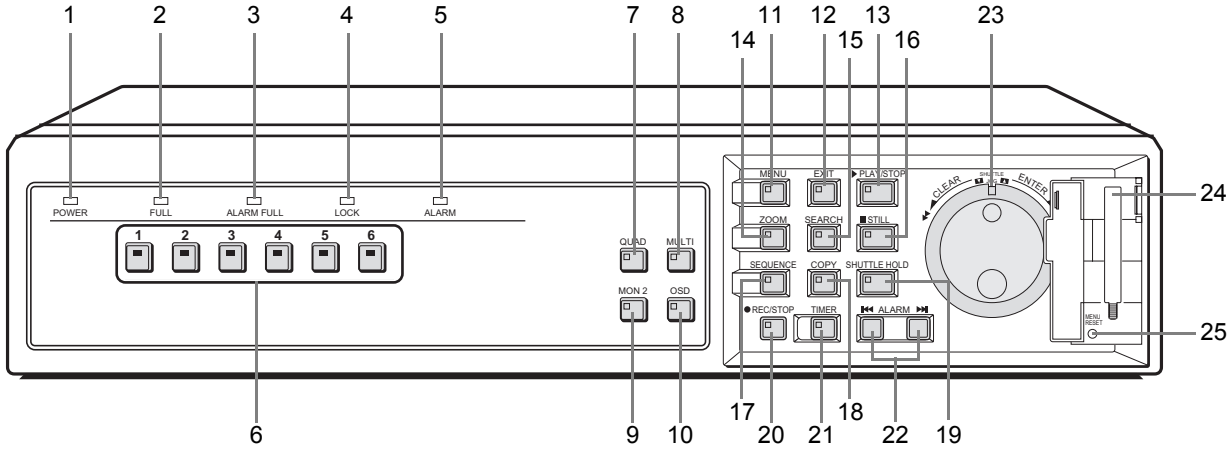
Protection of the hard disk

The hard disk is checked automatically when the power is turned on. If an abnormality is detected, the POWER indicator will begin to flash. If you need initialize the hard disk or to save images stored on it, contact the dealer from whom you purchased this digital video recorder.

Backup battery

The digital video recorder comes with a built-in lithium battery. If power is supplied continuously for at least 48 hours after setting the date and time, the clock will continue to operate normally for up to 30 days without a supply of power.
When disposing of this digital video recorder, contact the dealer from whom it was purchased for information on how to dispose of the lithium battery.

2 NAMES AND FUNCTIONS OF PARTS



Front panel

1. POWER indicator

The POWER indicator will light up in red when the power is on.
If the internal HDD or fan begins to malfunction, this indicator will be flashed.

2. FULL indicator (→P.61)

The FULL indicator will begin to flash when the amount of available memory in the hard disk's normal recording area drops to the percentage specified using menu settings.
In addition, recording will stop automatically when no more memory is available, and the FULL indicator will switch to a permanently lit condition.
This indicator can then be turned off by performing "AREA FULL RESET" using menu settings.

3. ALARM FULL indicator (→P.61)

The ALARM FULL indicator will begin to flash when the amount of available memory in the hard disk's alarm recording area drops to the percentage specified using menu settings.
In addition, recording will stop automatically when no more memory is available, and the ALARM FULL indicator will switch to a permanently lit condition.
This indicator can then be turned off by performing "AREA FULL RESET" using menu settings.

4. LOCK indicator (→P.81)

The LOCK indicator lights up when operation has been locked using <SECURITY LOCK SET>.
An alarm will be sounded if a button is pressed in this condition. In addition, a password entry screen will be displayed on the monitor at this time.
If the correct password is entered, the lock condition will be cancelled and the LOCK indicator will turn off.

5. ALARM indicator

The ALARM indicator flashes during alarm recording, and it is lit up during pre-alarm recording.

6. [CAMERA SELECT] buttons and indicators

When one or more cameras have been connected to the VIDEO IN terminals on the digital video recorder's rear panel and the appropriate [CAMERA SELECT] button is pressed, the corresponding indicator lights up and the video feed from that camera is displayed on-screen.

- During quad or multi 6 screen display:
  The indicators corresponding to the cameras being displayed on the monitor are lit up.
- If video is lost:
  The indicator starts to flash.
- If an alarm occurs:
  The indicator for the corresponding camera starts to flash.

7. [QUAD] button and indicator (→P.16)

The [QUAD] button is used to display video in quad screens, and the indicator will light up when this type of display is being presented.
The QUAD indicator will turn off when a different screen display mode is adopted.

8. [MULTI] button and indicator (→P.17)

The [MULTI] button is used to display video in multi 6 screens, and the indicator will light up when this type of display is being presented.
The MULTI indicator will turn off when a different screen display mode is adopted.

9. [MON2] button and indicator (→P.18)

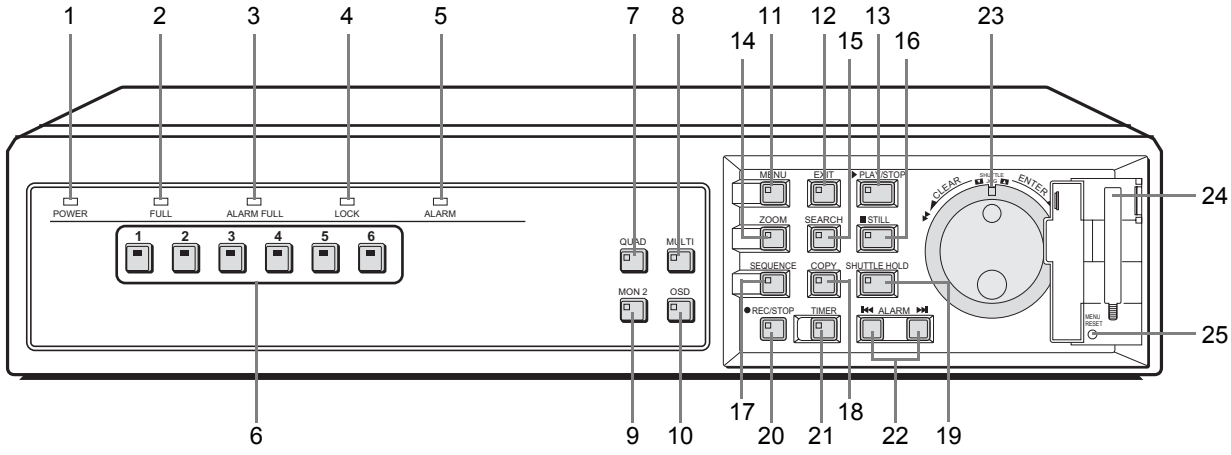
If the [MON2] button is pressed while a monitor is connected to the MON2 output terminal on the rear panel, it will be possible to change the monitor 2 output video.
The [CAMERA SELECT] and [SEQUENCE] buttons can be used, and the indicator will be lit up during the setting procedure.

10. [OSD] button and indicator (→P.13)

Each time the [OSD] button is pressed while the digital video recorder is recording, playing, or stopped, the operation display area changes position between the top or bottom of the screen or will become hidden; furthermore, the indicator will light up whenever this information is being displayed.

11. [MENU] button and indicator

The [MENU] button is used to display the menu screens (i.e., setting screens), and the indicator lights up while any of these screens is being displayed.



12. [EXIT] button and indicator
The [EXIT] button is used to exit the main menu or a sub-menu. When a menu is displayed, the indicator will turn off; when the menu is closed and the normal display is restored, the indicator will light up.

13. [PLAY/STOP] button and indicator (→P.22)
When the [PLAY/STOP] button is pressed, a recording from the normal recording area or alarm recording area is played and the indicator lights up. When pressed during playback, this button stops the digital video recorder.

14. [ZOOM] button and indicator (→P.23)
When the [ZOOM] button is pressed during playback on a full screen, a portion of the playback video is magnified and the indicator lights.

15. [SEARCH] button and indicator (→P.27)
When the [SEARCH] button is pressed while the digital video recorder is recording or stopped, the search menu is displayed and the indicator lights up. The search menu can be closed by pressing this button once again.

16. [STILL] button and indicator (→P.24)
When the [STILL] button is pressed during playback, the current frame is displayed as a still image and the indicator lights up. Playback can be resumed by pressing this button once again.

17. [SEQUENCE] button and indicator(→P.17)
The [SEQUENCE] button can be pressed during monitoring to automatically switch between full screen or quad screen display.
When pressed, the indicator begins flashing and the display is changed automatically. The lighting condition of CAMERA SELECT indicators also changes in response to the screen display.

18. [COPY] button and indicator (→P.35)
The [COPY] button is used to copy recorded video to the hard disk's archive area, to a CompactFlash card, or to a Microdrive.
The indicator lights up during the copy process.

19. [SHUTTLE HOLD] button and indicator (→P.22)
The [SHUTTLE HOLD] button is used to lock shuttle dial operation for a constant speed of playback or slow playback. The indicator lights up while the shuttle dial is locked.

When a password has been set, furthermore, this button can be pressed for at least three seconds to activate the security lock.

20. [REC/STOP] button and indicator (→P.19)
The [REC/STOP] button is pressed to start normal recording, and the indicator lights up during this process. Furthermore, pressing this button for at least three seconds stops recording and turns off the indicator.

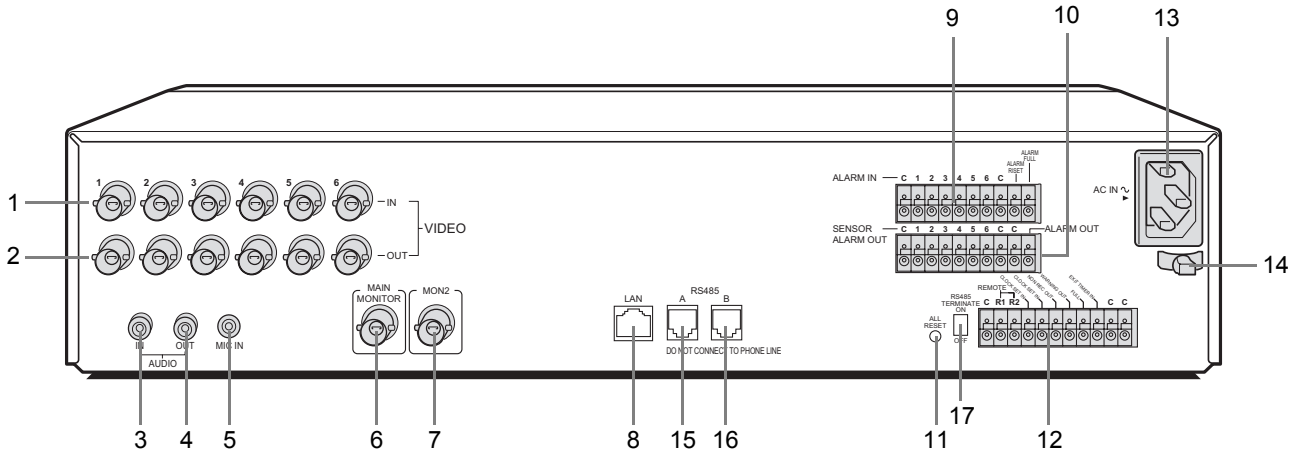
21. [TIMER] button and indicator (→P.19)
If the [TIMER] button is pressed while the recording is stopped, timer recording standby mode is adopted and recording will then start automatically at the set time. The indicator will be lit up while in timer recording standby mode.
If the button is pressed during timer recording, this process is stopped and the indicator turns off. Furthermore, if the [TIMER] button is pressed when in timer recording standby mode, timer recording will be cancelled.

22. [ALARM] buttons (→P.27)
When an [ALARM] button is pressed during playback or still, the digital video recorder skips to the next earlier or next later alarm.

23. Jog dial (inside) and shuttle dial (outside)
- During playback:
  Use the jog dial to change the playback speed.
  Use the shuttle dial to perform fast-forward or fast-reverse playback.
- During menu display:
  Use the jog dial to move the cursor and to change setting values. Use the shuttle dial to confirm settings.

24. CompactFlash card slot (→P.36)
This slot is used to house a CompactFlash card or Microdrive.

25. [MENU RESET] button (→P.40)
The [MENU RESET] button is used to initialize menu settings.
When setting motion sensors, furthermore, all sensors on the same line as the cursor can be turned on simultaneously by pressing this button.



Rear panel

1. **VIDEO IN terminals**
2. **VIDEO OUT terminals**
3. **AUDIO IN terminal**
4. **AUDIO OUT terminal**
5. **MIC IN terminal**
6. **MAIN MONITOR output terminal**
7. **MON2 output terminal**
8. **LAN terminal (10 Base-T or 100 Base-TX)**
9. **ALARM IN terminals (1 to 6)**

These terminals are used to activate alarm recording in response to operation of an alarm switch on a connected device.

Pin	Signal
C	Ground
ALARM IN 1	Alarm input No. 1
ALARM IN 2	Alarm input No. 2
ALARM IN 3	Alarm input No. 3
ALARM IN 4	Alarm input No. 4
ALARM IN 5	Alarm input No. 5
ALARM IN 6	Alarm input No. 6
C	Ground
ALARM RESET	Alarm reset input
ALARM FULL	Capacity warning output for alarm recording area space

10. SENSOR ALARM OUT terminals

The terminals are used when motion sensors have been set (see P.72) to output an alarm signal to a connected device upon detection of motion.

Pin	Signal
C	Ground
SENSOR ALARM OUT 1	Output of an alarm signal for Camera No. 1
SENSOR ALARM OUT 2	Output of an alarm signal for Camera No. 2
SENSOR ALARM OUT 3	Output of an alarm signal for Camera No. 3
SENSOR ALARM OUT 4	Output of an alarm signal for Camera No. 4
SENSOR ALARM OUT 5	Output of an alarm signal for Camera No. 5
SENSOR ALARM OUT 6	Output of an alarm signal for Camera No. 6
C	Ground
C	Ground
ALARM OUT	Grouped alarm output

11. [ALL RESET] button

When the [ALL RESET] button is pressed, the digital video recorder is reset and the time is returned to its default setting.

12. Control terminals

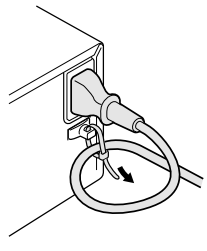
Pin	Signal
C	Ground
REMOTE R1	Remote input 1
REMOTE R2	Remote input 2
CLOCK SET IN	Input of a clock setting signal from an external device
CLOCK SET OUT	Output of a clock setting signal to an external device
NON REC OUT	Non-recording output
WARNING OUT	Output of an HDD malfunction error
FULL	Capacity warning output for normal recording area space
EXT TIMER IN	Signal input from an external timer
NC	- (non connection)
C	Ground

13. AC power socket (AC IN)

Insert the supplied power cable securely into this socket.

14. Power cord holder

Secure the power cord to the holder using the cord tie (accessory) as shown in the illustration.



15. RS-485 terminal (A)

16. RS-485 terminal (B)

17. RS-485 termination switch

3 INSTALLATION AND CONNECTIONS

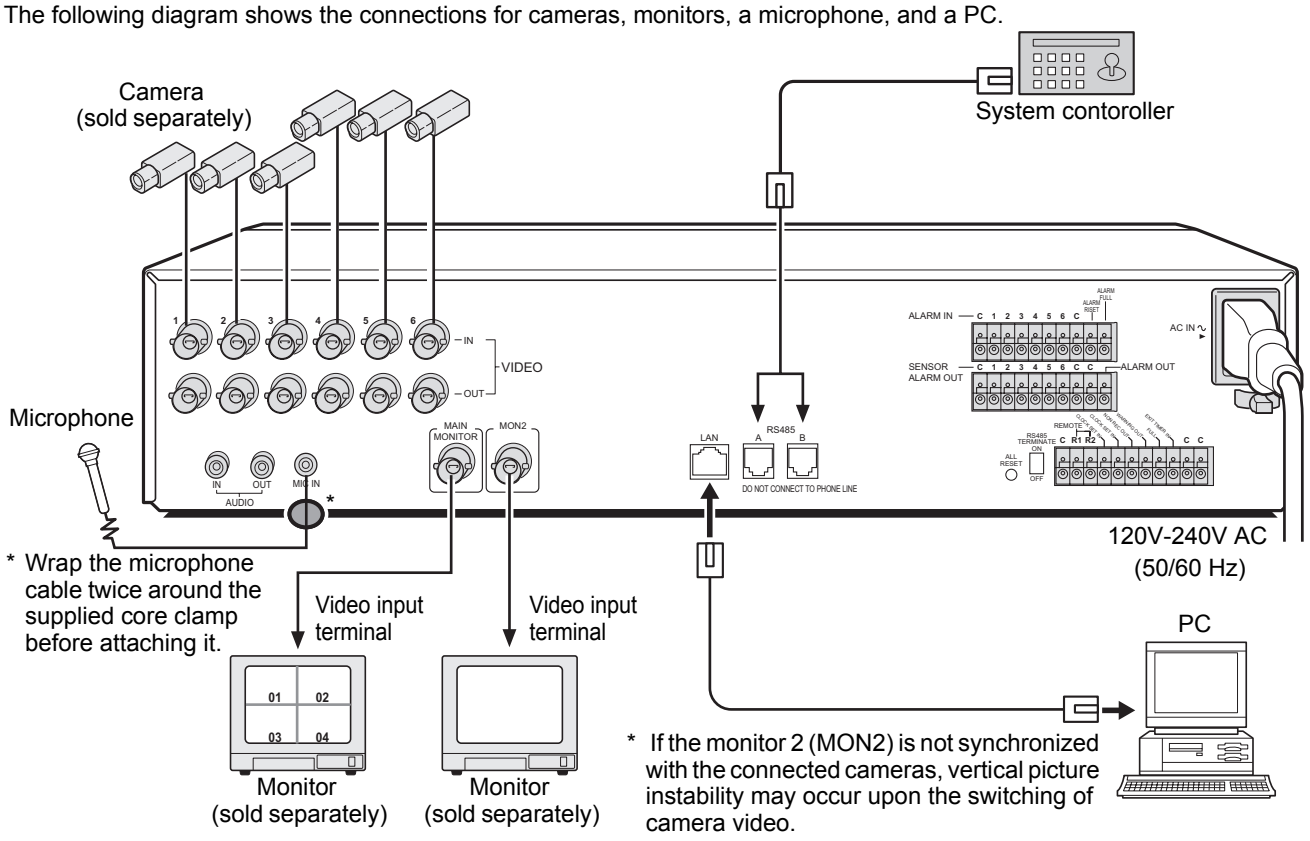
This section describes how to connect the digital video recorder to video cameras and other devices. Be sure to read the instruction manuals for each connected device.

CAUTION

- Improper connections can result in malfunction or the emission of smoke.
- A separate power supply is required for operation of each camera.

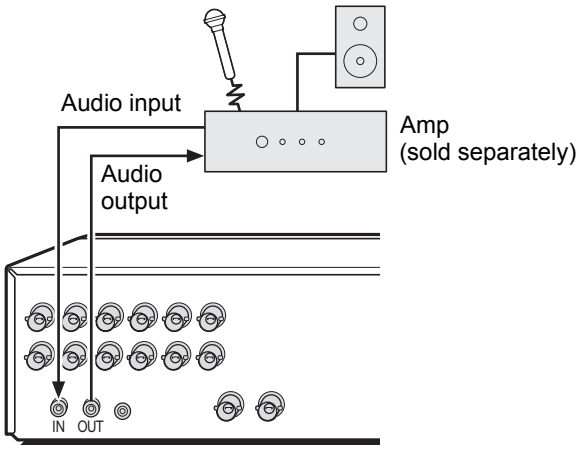
Basic connections

The following diagram shows the connections for cameras, monitors, a microphone, and a PC.



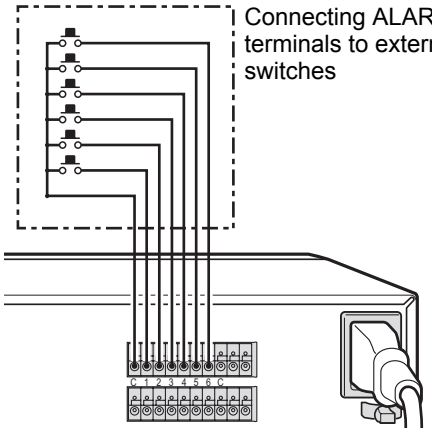
Connecting an amplifier

An amplifier is connected when using a microphone or external speakers with the digital video recorder.



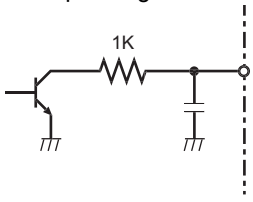
Connecting ALARM IN terminals

When using external alarms (i.e., intruder sensors and the like), external switches are to be connected to the ALARM IN terminals.



Connecting SENSOR ALARM OUT terminals

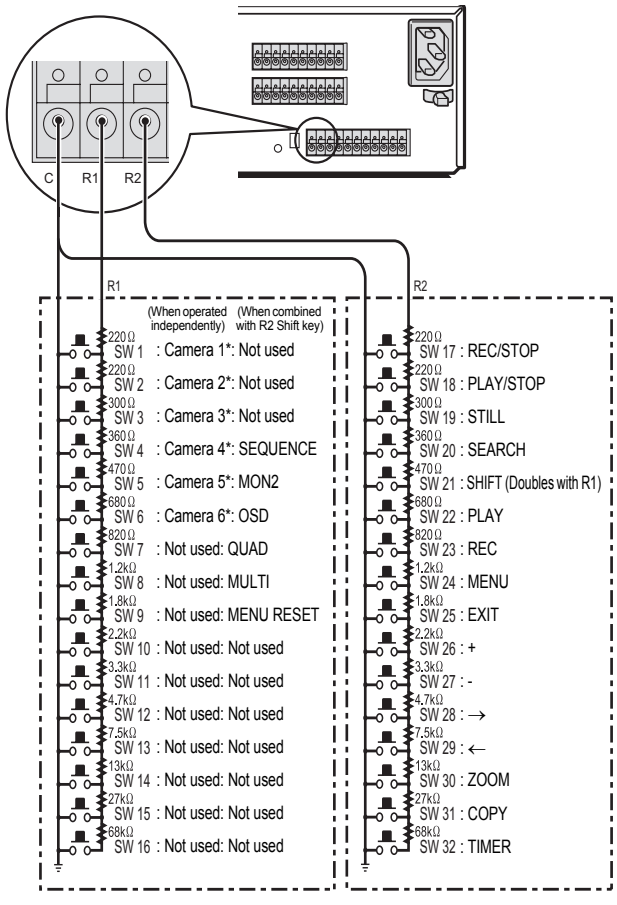
The sensor alarm output terminals are used to relay alarm signals whenever one of the digital video recorder's motion sensors is triggered. Normally in an open condition, a terminal adopts low condition when a sensor for the corresponding camera number has been triggered.



Rating for each terminal
- Maximum current: 25 mA
- Maximum voltage: 25 V

Connecting control terminals

The connections for a remote control circuit are shown below. This digital video recorder can be remotely controlled when a remote-control circuit similar to that shown here is connected to the remote-input control terminals.

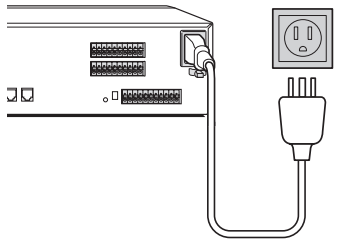

C
R1
R2
R1
(When operated independently)
(When combined with R2 Shift key)
220Ω SW 1 : Camera 1*: Not used
220Ω SW 2 : Camera 2*: Not used
300Ω SW 3 : Camera 3*: Not used
360Ω SW 4 : Camera 4*: SEQUENCE
470Ω SW 5 : Camera 5*: MON2
680Ω SW 6 : Camera 6*: OSD
820Ω SW 7 : Not used: QUAD
1.2kΩ SW 8 : Not used: MULTI
1.8kΩ SW 9 : Not used: MENU RESET
2.2kΩ SW 10 : Not used: Not used
3.3kΩ SW 11 : Not used: Not used
4.7kΩ SW 12 : Not used: Not used
7.5kΩ SW 13 : Not used: Not used
13kΩ SW 14 : Not used: Not used
27kΩ SW 15 : Not used: Not used
68kΩ SW 16 : Not used: Not used
R2
220Ω SW 17 : REC/STOP
220Ω SW 18 : PLAY/STOP
300Ω SW 19 : STILL
360Ω SW 20 : SEARCH
470Ω SW 21 : SHIFT (Doubles with R1)
680Ω SW 22 : PLAY
820Ω SW 23 : REC
1.2kΩ SW 24 : MENU
1.8kΩ SW 25 : EXIT
2.2kΩ SW 26 : +
3.3kΩ SW 27 : -
4.7kΩ SW 28 : →
7.5kΩ SW 29 : ←
13kΩ SW 30 : ZOOM
27kΩ SW 31 : COPY
68kΩ SW 32 : TIMER

- Use a resistance of 1/10 ohms or more and with a D ranking (Precision within ±0.5%).
- The remote control cable should be no more than 5m long.

Connecting the power cord

1 When you have finished making all the other connections, make sure the voltage is 120V-240V AC and insert the power plug into the wall outlet.

There is no power switch. The display indicators flash, and after a few moments, the monitor screen displays the camera image.



120V-240V AC
(50/60 Hz)

- **When turning the power ON for the first time**
  "PLEASE SET THE CLOCK" is displayed on the monitor screen. Follow the procedures on P.14 to set the clock.
- **If the clock is already set**
  The operation display area is displayed.

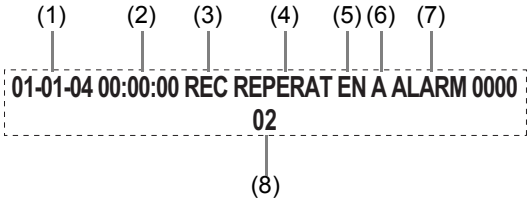
Operation display area

CAUTION

- **If the POWER indicator starts flashing;**
  The POWER indicator flashes when there is a problem with the hard disk. In this type of situation, initialize the hard disk. (→P.81)
  If you need to save video stored on the disk, contact the dealer from whom you purchased this digital video recorder.
- The power cord's ground terminal is not provided for enhanced safety; rather, it can be used to reduce the level of interference when the digital video recorder is connected to analog devices.
  If a large amount of noise is generated when the digital video recorder is connected to analog devices, connect this terminal to the building's earth.

Operation display area

Whenever the power is turned on, the operation display area will be shown at the top of the monitor screen. This area indicates the date, time, picture quality, and other information needed for operation.



(1) Date display (→P.14)
"01-01-04" (day-month-year) is displayed when you turn the power on for the first time. Be sure to specify the correct date using menu settings.

(2) Time display (→P.14)
"00:00:00" is displayed when you turn the power on for the first time. The digital video recorder uses the date and time to manage recording and playback points. Accordingly, if the time has not been set correctly, you will not be able to effectively search for video data. Make sure to specify the time using menu settings. Recording will not be possible until a setting has been made.

(3) Operating symbol display
Displays the current operation (such as recording or playback).

REC: Recording	▶▶: Fast-forward playback
EXT: External timer recording	◀◀: Fast-rewind playback
▶: Playback	▮▮▶: Slow playback
◀: Reverse playback	◀▮▮: Reverse slow playback
▮▮: Still	

NOTE

- During simultaneous recording and playback, the display indicates playback (▶).

(4) Remaining memory in recording area (→P.59)
Displays the remaining area memory as a percentage when overwriting in the normal recording area or the alarm recording area is forbidden. If overwriting has been permitted, "REPEAT" is displayed.

(5) Picture quality display (→P.62,68)
Displays the quality of the video that can be recorded on the hard disk. Set to "EN" (Enhanced) by default.

BA	Basic
NO	Normal
EN	Enhanced
FI	Fine
SF	Super Fine

(6) Audio recording display
"A" is displayed when audio is being recorded or played back.

(7) Alarm display and alarm count display (→P.68)
When you set an alarm using the "ALARM REC MODE SET" menu item, the alarm display area presents the following information.

- **When alarm recording is set;**
  "ALARM" is displayed.
  "ALARM" is flashed during alarm recording.
- **When pre-alarm recording is set;**
  "PRE" is displayed.
  When an alarm occurs, "PRE" disappears, "ALARM" is displayed, and the number of alarms is shown. The total number is indicated in the alarm display.
- **When performing playback from the archive area;**
  "ARCHIV" is displayed.
- **When an external alarm signal is activated;**
  "EA" is flashed to the left of the camera number.
- **When an motion sensor alarm signal is activated;**
  "SA" is flashed to the left of the camera number.

(8) Camera title display
The title of the playback or monitoring camera is displayed.

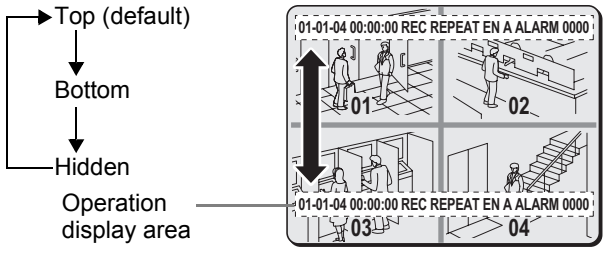
NOTE

- Although operations such as playback, copying, and data transfer are possible while recording, this unit gives priority to recording, and other operations may be delayed as a result.

Changing the position of the operation display area

1 Press the [OSD] button several times.

As the [OSD] button is pressed, the operation display area moves to a different location or is hidden.



Changing the language

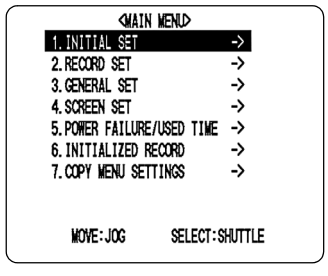
Use the following procedure to set the language displayed on the monitor.

[Settings] (◆ indicates default setting.)

Item	Setting	Description
LANGUAGE	◆ENGLISH	Sets the language to English.
	ESPAÑOL	Sets the language to Spanish.
	DEUTSCH	Sets the language to German.
	FRANCAIS	Sets the language to French.

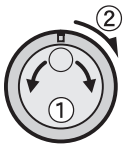
1 Press the [MENU] button.

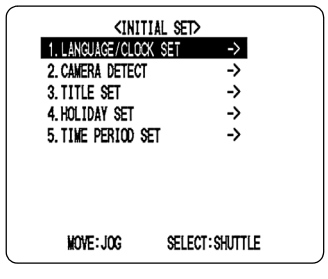
The MENU indicator lights up and the <MAIN MENU> is displayed.


<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

2 Turn the jog dial to select "1. INITIAL SET", and then turn the shuttle dial clockwise.

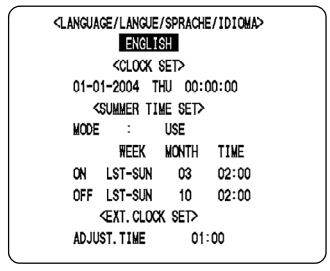
The <INITIAL SET> screen is displayed.





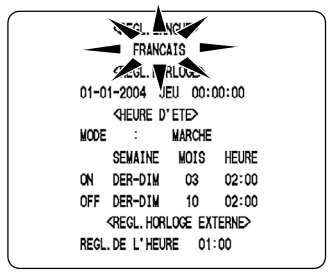
3 Turn the jog dial to select "1. LANGUAGE/CLOCK SET", and then turn the shuttle dial clockwise.

The cursor moves to "ENGLISH".



4 Turn the shuttle dial clockwise, and then turn the jog dial to select the desired language.

The set item flashes.



5 When you have made a selection, turn the shuttle dial clockwise.

The cursor moves to the date and time.
The language has now been set.
To return to the normal screen, press the [EXIT] button.

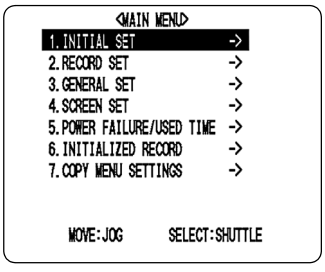
Setting the time

(Default: 01-01-2004 THU 00:00:00)
Be sure to set the correct date and time as these settings are used during recording and searching.

Example: Setting 8:30 on 22 May 2004

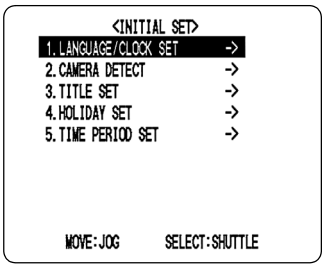
1 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.


<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

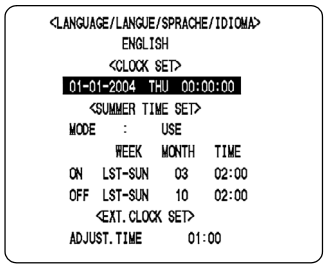
2 Turn the jog dial to select "1. INITIAL SET", and then turn the shuttle dial clockwise.

The <INITIAL SET> screen is displayed.



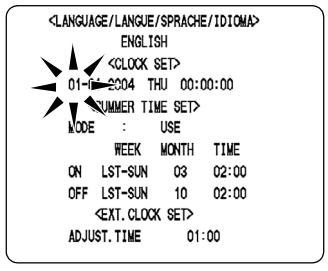
3 Turn the jog dial to select "1. LANGUAGE/CLOCK SET", and then turn the shuttle dial clockwise.

The <LANGUAGE/LANGUE/SPRACHE/IDIOMA> screen is displayed.



4 Turn the shuttle dial clockwise.

"01" flashes (indicating the day).



5 Turn the jog dial to select "22", and then turn the shuttle dial clockwise.

"01" flashes (indicating the month).

6 Use the same procedure to set the month (05), year (2004), hour (08), and minute (30).

When you have set the minute, the cursor moves to "MODE" under <SUMMER TIME SET>, and the clock starts counting from 00 seconds.

- The week day is set automatically.
- The clock is stopped during date and time settings.

7 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

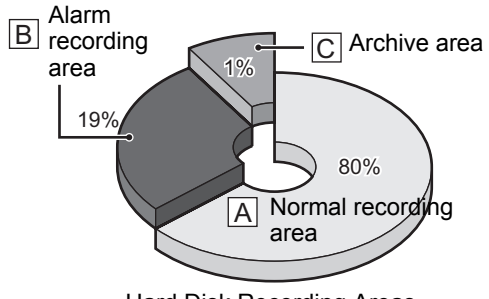
The internal hard disk

```
        <RECORDING AREA SET>
  TOTAL CAPACITY          :  82GB
  NORMAL RECORDING AREA   :  80 %
    AREA FULL RESET  ->
  ALARM RECORDING AREA    :  19 %
    AREA FULL RESET  ->
  ARCHIVE AREA            :   1 %
    AREA FULL RESET  ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```

Hard disk recording areas

When the digital video recorder is turned on, recording areas are automatically setup within the internal hard disk (with the default settings being normal recording area: 80%, alarm recording area: 19%, and archive area: 1%). When the [REC/STOP] button is pressed, this digital video recorder starts recording video data in the normal recording area. When an alarm occurs, the corresponding video data is recorded in the alarm recording area.



Hard Disk Recording Areas

[A] Normal recording area

Recording mode	Recording method	
Normal recording	Manual	When monitoring, recording is performed in response to pressing of the [REC/STOP] button.
Timer recording	Automatic	Recording is carried out in accordance with timer settings.

[B] Alarm recording area

Recording mode	Recording method	
Alarm recording	Automatic	Recording is carried out when alarm recording is set to “ENABLED”. Specifically, alarm images are recorded in the alarm recording area in response either to operation of a switch that has been connected to an alarm input terminal or to detection of an intruder or the like using motion sensors.
Pre-alarm recording	Automatic	When pre-alarm recording is set to “ON”, it will be possible to record video from before the occurrence of an alarm based on the corresponding settings.

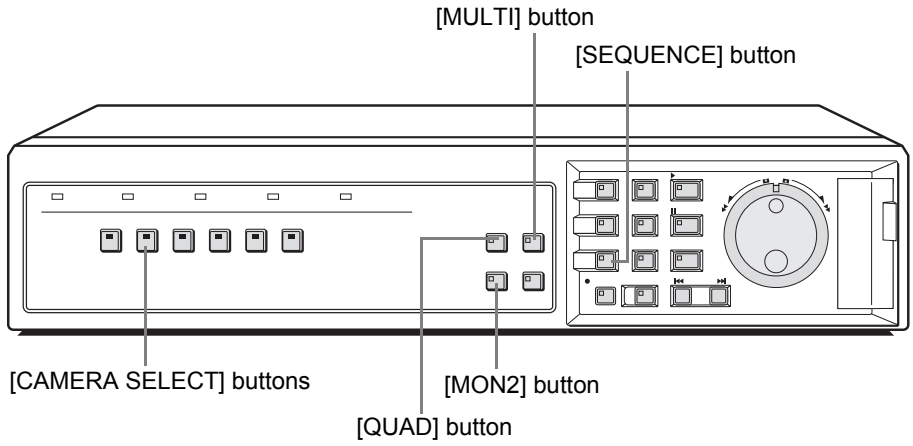
[C] Archive area

Recording mode	Recording method	
Copy	Manual	This area is used to store important video data copied from the normal recording area and/or alarm recording area. By making changes to the normal recording area and the alarm recording area, this area can be extended to up to 10 GB in size (i.e., 6% when using a 160 GB hard disk).

CAUTION

- If the memory allocations for the various hard disk recording areas are changed during a recording process, all stored recordings will be deleted and the hard disk will be initialized; accordingly, special care should be taken. For more details, refer to P.58.
- In the case of certain hard disks, error may be present in the total hard disk capacity as displayed on menu screens.

2 VIEWING VIDEO FROM A CAMERA

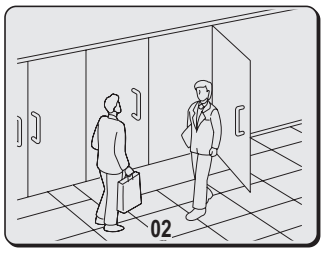


Viewing on a full screen

Example: Selecting Camera 2

1 Press the No. 2 [CAMERA SELECT] button.

The No. 2 CAMERA SELECT indicator lights up and video from Camera 2 is displayed on a full screen.



Viewing enlarged live images

Images can be enlarged while monitoring on a full screen. Operations are the same as “Enlarging the playback video”. See P.23 for more details.

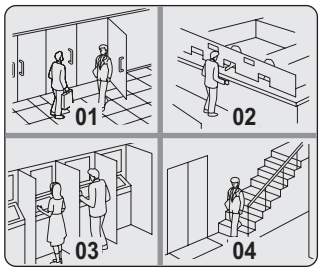
Viewing on multiple screens

Use the following procedure to display video from the connected cameras in split-screen format.

Viewing on quad screens

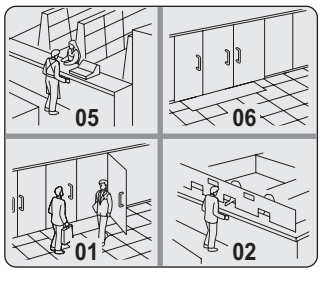
1 Press the [QUAD] button.

The QUAD indicator lights up and the monitor display is divided in four. Video from Camera No. 1 through Camera No. 4 is displayed each of the segments.



2 To view video not currently being displayed, press the [QUAD] button once again.

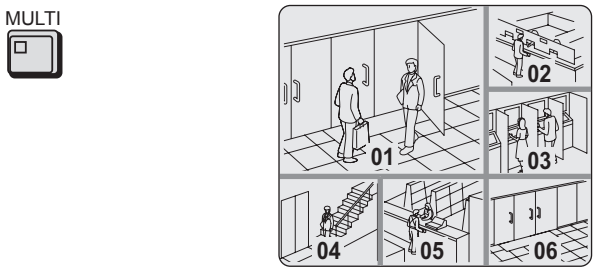
Each time this button is pressed, the content of the split screen will toggle between video from cameras No. 1 through No. 4 and video from cameras No. 5, No. 6, No. 1, and No. 2.
To return to full screen display, press the appropriate [CAMERA SELECT] button.



Viewing on multi 6 screens

1 Press the [MULTI] button.

The MULTI indicator lights up and the monitor display is divided in six.



NOTE

- In the case of both quad and multi 6 screen display, you can change the positions in which video from the various cameras are displayed. (→P.87)

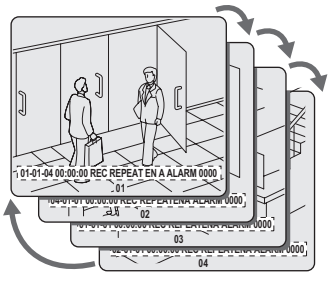
Viewing with automatic screen selection

Setting automatic full screen selection

Use the following procedure when viewing a full screen to have the displayed video change automatically based on camera numbers.

1 Press the [SEQUENCE] button.

The SEQUENCE indicator starts to flash and the displayed video changes automatically based on camera numbers.



NOTE

- It is possible to specify the cameras for which automatic selection is to be carried out. (→P.89)

Canceling automatic selection

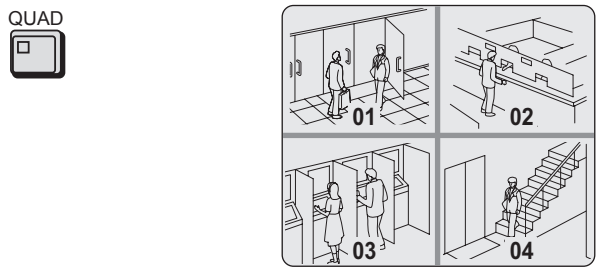
2 Either press the [SEQUENCE] button once again or press the appropriate [CAMERA SELECT], [QUAD], or [MULTI] button.

Automatic selection ends and the display returns to the normal screen.

Setting automatic quad-screen selection

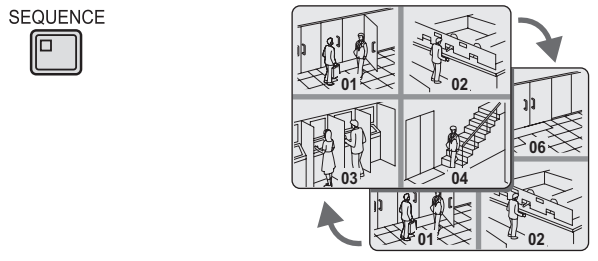
1 Press the [QUAD] button.

The QUAD indicator lights up and the monitor display is divided in four.



2 Press the [SEQUENCE] button.

The content of the split screen will automatically toggle between video from cameras No. 1 through No. 4 and video from cameras No. 5, No. 6, No. 1, and No. 2.



Returning to normal quad-screen display

3 Press the [SEQUENCE] button once again.

Automatic selection ends and normal quad-screen display returns.

CAUTION

- Automatic selection cannot be used with playback video.

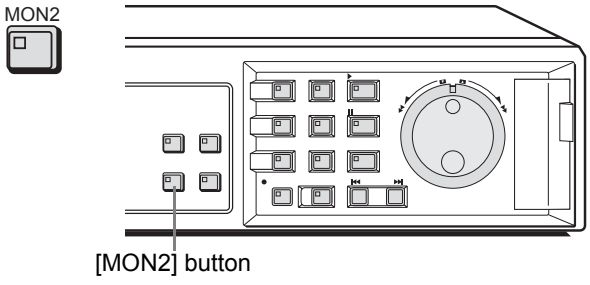
Viewing on the monitor 2

When a monitor 2 is connected to the monitor 2 output terminal on the digital video recorder's rear panel, this monitor can be used to view video from a single camera or to automatically scroll through video from all cameras, even if the main monitor is currently displaying video in split-screen format. In addition, it is also possible to display video on the monitor 2 automatically from any camera for which an alarm has occurred. By default, automatic full screen selection is carried out.

Change the monitor 2 setting

1 Press the [MON2] button.

The MON2 indicator lights up.



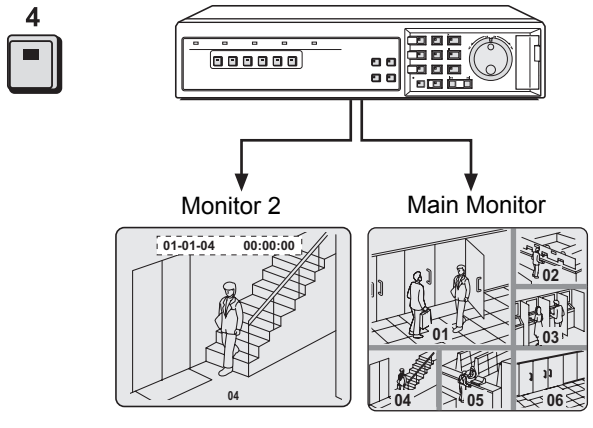
CAUTION

- Monitor 2 operation is not possible when a menu screen is being displayed.

Selecting Camera No. 4 for full screen

2 Press the No. 4 [CAMERA SELECT] button.

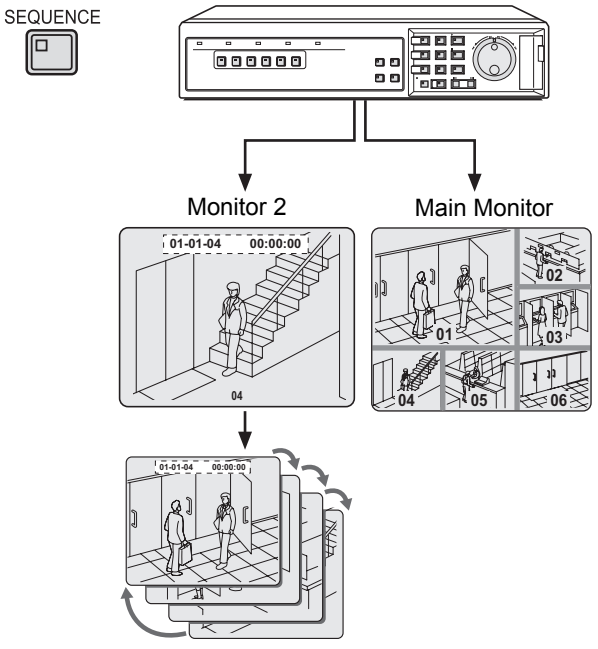
The video from Camera No. 4 is displayed in full screen format on the monitor 2.



Setting automatic full screen selection

1 Press the [SEQUENCE] button.

The video displayed on the monitor 2 changes automatically based on camera numbers.
Press the [SEQUENCE] button once again to cancel automatic selection.



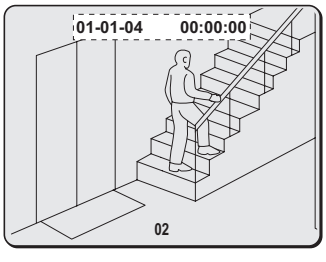
CAUTION

- If the monitor 2 is not synchronized with the connected cameras, vertical picture instability may occur upon the switching of camera video.

Displaying alarm video in full screen format

1 Set "MON.2 DISPLAY" from <ALARM OPERATION SET> to "ON". (→P.74)

When an alarm occurs, the corresponding video is displayed in full screen format on the monitor 2.



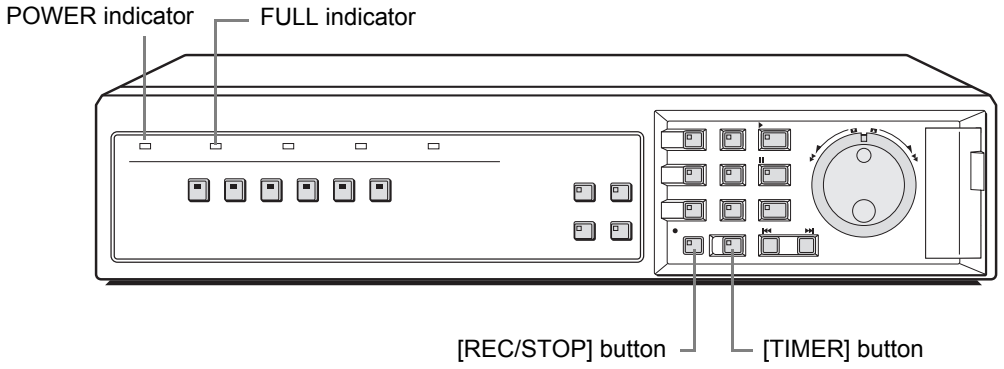
Ending the monitor 2 setting procedure

1 Press the [MON2] button.

The MON2 indicator turns off.

CAUTION

- Playback video cannot be viewed on the monitor 2.

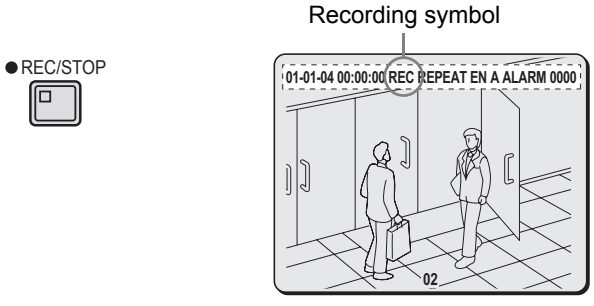


Normal recording

Use the following procedure to record the monitored video in the normal recording area.
Recording will not be possible until a time has been set for the digital video recorder. Make sure to set the time. (→P.14)

1 Press the [REC/STOP] button.

The REC/STOP indicator lights up, “REC” appears on-screen (i.e., the recording symbol), and recording starts.



NOTE

- When recording for the first time, the default settings are used. For details regarding modification of the picture quality or recording rate, see P.62.
- When the space remaining in the normal recording area drops below a preset value, the FULL indicator on the digital video recorder’s front panel starts to flash. If recording is continued beyond this point, the normal recording area will become full, recording will stop, and the FULL indicator will stop flashing and remain lit. In such a case, use the <RECORDING AREA SET> screen to perform “AREA FULL RESET” for the normal recording area, thus allowing recording to start again from the beginning. (→P.60)
- Playback is possible even while recording. See P.22 for more details.

Ending normal recording

2 Press and hold the [REC/STOP] button for approximately 3 seconds.

“REC” disappears from the operation display and recording ends.

Timer recording

Use the following procedure to record the monitored video for a preset length of time in the normal recording area.
Recording will not be possible until a time has been set for the digital video recorder. Make sure to set the time. (→P.14)

1 Press the [TIMER] button.

The TIMER indicator lights up and the digital video recorder enters timer recording standby mode.

(1) See P.65 for more details on timer recording settings.
(2) At the time specified for the start of timer recording, the REC/STOP indicator lights up, “REC” appears on-screen (i.e., the recording symbol), and recording starts.
(3) At the time specified for the end of timer recording, the TIMER and REC/STOP indicators turn off, and recording ends.

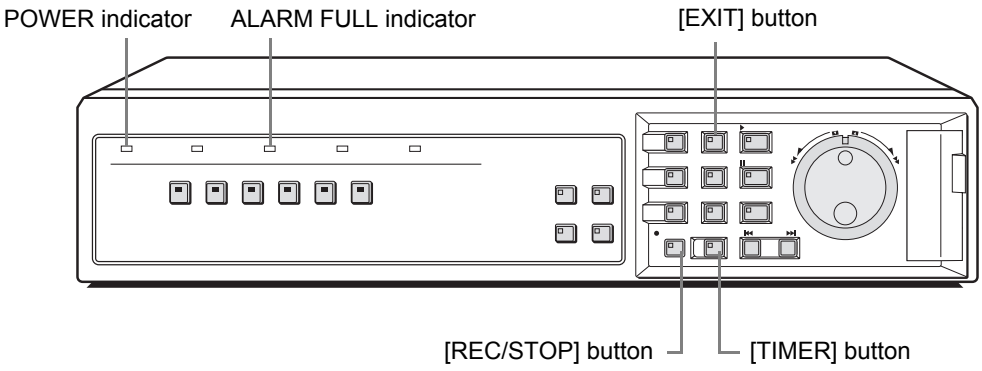
NOTE

- When the space remaining in the normal recording area drops below a preset value, the FULL indicator on the digital video recorder’s front panel starts to flash. If recording is continued beyond this point, the normal recording area will become full, recording will stop, and the FULL indicator will stop flashing and remain lit. In such a case, use the <RECORDING AREA SET> menu to perform “AREA FULL RESET” for the normal recording area, thus allowing recording to start again from the beginning. (→P.60)
- Playback is possible even while recording. See P.22 for more details.

Stopping timer recording before completion

2 Press the [TIMER] button.

The TIMER indicator turns off and recording ends.

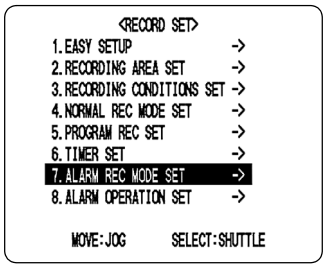


Alarm recording

Use the following procedure to automatically record alarm video to the alarm recording area when an alarm signal is detected.
Recording will not be possible until a time has been set for the digital video recorder. Make sure to set the time. (→P.14)

1 Set alarm recording.

Follow the instructions on P.68 set “7. ALARM REC MODE SET” from <RECORD SET>.

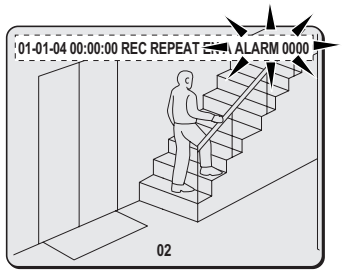


2 Press the [EXIT] button.

The setting procedure is ended and the normal screen is displayed.

When an alarm signal is detected

- When an alarm signal is detected, “ALARM” flashes in the operation display and the alarm recording starts (indicated by “REC”).
- Alarm video is recorded to the alarm recording area.
- Whenever an alarm occurs, the number of alarms as indicated in the operation display is incremented.



Counts the number of alarms. Values between 0000 and 9999 can be displayed.

- If an alarm occurs during normal recording or timer recording, the recording operation will be ended.
- A maximum of 16,000 alarm recordings can be made on one hard disk. If hard disk expansion is carried out, this number can be increased to 32,000. Note, however, since settings for each condition will affect the maximum number of recordings that can be made, be sure to check menu settings and display content.

3 End alarm recording.

When the alarm duration has expired (default setting: 20 seconds), both “REC” and “ALARM” finish flashing from the operation display and recording stops.

NOTE

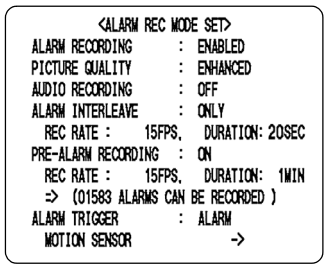
- When the space remaining in the alarm recording area drops below a preset value, the FULL indicator on the digital video recorder’s front panel starts to flash. If recording is continued beyond this point, the alarm recording area will become full, recording will stop, and the FULL indicator will stop flashing and remain lit. In such a case, use the <RECORDING AREA SET> menu to perform “AREA FULL RESET” for the alarm recording area, thus allowing recording to start again from the beginning. (→P.60)

Pre-alarm recording

Use the following procedure to record video from immediately before occurrence of an alarm.

1 Set pre-alarm recording.

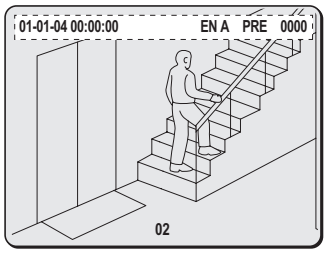
Follow the instructions on P.68 set “7. ALARM REC MODE SET” from <RECORD SET> to “PRE-ALARM RECORDING”.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM INTERLEAVE : ONLY
REC RATE : 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : 15FPS, DURATION: 1MIN
=> (01583 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->>

2 After entering the setting, press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

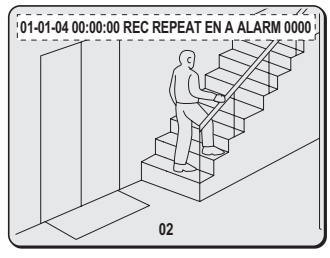
“PRE” appears in the operation display area. Pre-alarm recording starts (without the “REC” symbol being displayed).



If an alarm is detected

Pre-alarm recording is automatically ended and alarm recording starts.

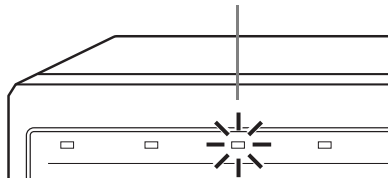
- “PRE” from the operation display area is replaced by “ALARM”, and “ALARM” starts to flash.



NOTE

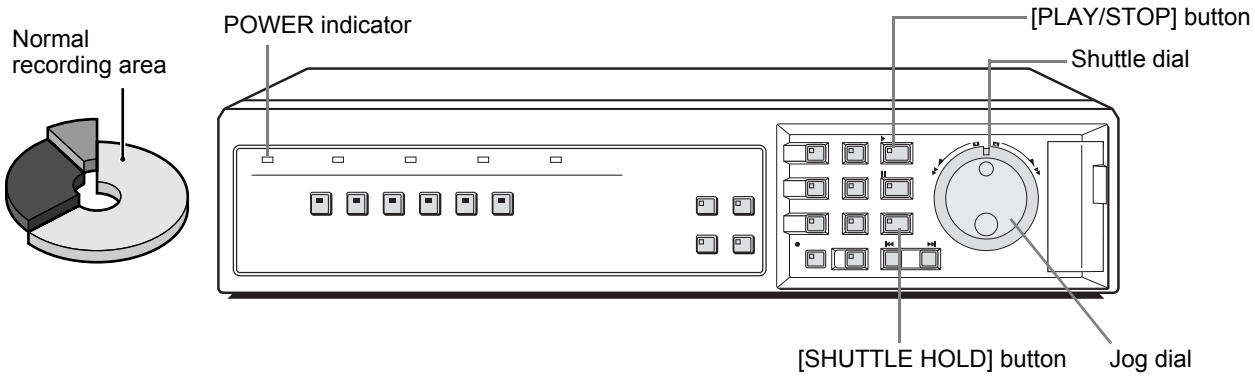
- When recording for the first time, the default settings are used. For details regarding modification of the picture quality or recording rate, see P.62.
- When the space remaining in the alarm recording area drops below a preset value, the FULL indicator on the digital video recorder’s front panel starts to flash. If recording is continued beyond this point, the alarm recording area will become full, recording will stop, and the FULL indicator will stop flashing and remain lit. In such a case, use the <RECORDING AREA SET> menu to perform “AREA FULL RESET” for the alarm recording area, thus allowing recording to start again from the beginning. (→P.60)

ALARM FULL indicator



4 PLAYBACK

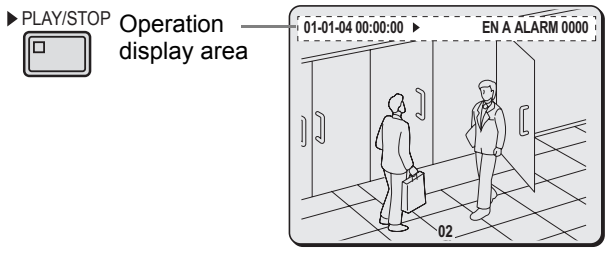
Use the procedures following procedure to play video stored in the normal recording area (during normal or timer recording).



Playing video on a full screen

1 Press the [PLAY/STOP] button.

The PLAY/STOP indicator lights up, and "▶" appears in the operation display area. Video stored in the normal recording area is played back. Use the appropriate [CAMERA SELECT] button to select the camera whose video is to be played.



NOTE

- Video playback begins at the start point of recording.
- If the start point of recording has been cleared or reset, video playback will start from the earliest recording.
- When playback ends, the digital video recorder pauses automatically.
- The operation display area indicates that playback is paused (using "II"), and the STILL indicator lights.
- After being paused or stopped, playback resumes from the stop point.

Ending playback

2 Press the [PLAY/STOP] button.

Playback ends.

■ Playing video near the point of recording

The digital video recorder prioritizes recording operations, and as a result, video playback may pause temporarily.

Fast-forward and fast-rewind playback

1 Turn the shuttle dial clockwise or counter-clockwise during video playback.

When turned clockwise, the symbol "▶▶" appears in the operation display area and fast-forward playback is started.
When turned counter-clockwise, the symbol "◀◀" appears in the operation display area and fast-rewind playback is started.
Normal playback is resumed when you release the shuttle dial.

NOTE

- If the [SHUTTLE HOLD] button is pressed while the shuttle dial is being turned and either "◀◀" or "▶▶" is displayed, the speed of fast-rewind or fast-forward playback will be maintained even after the dial is released.

Changing the playback speed

Starting fast-forward or slow playback

(1) Performing fast-forward.

When the jog dial is turned clockwise, fast-forward playback is started and the symbol "▶▶" appears in the operation display area.

(2) Performing slow playback.

When the jog dial is turned counter-clockwise, slow playback is started and the symbol "II▶" appears in the operation display area.

(3) Returning to normal playback.

Turn the jog dial slightly clockwise to display "▶".

CAUTION

- Audio will not be played during fast-forward, fast-rewind, slow, reverse-slow, and reverse playback.

Starting fast-rewind or reverse-slow playback

(1) Turn the shuttle dial counter-clockwise to display "◀" in the operation display area.

Reverse playback starts at the same speed as normal playback.

Press the [SHUTTLE HOLD] button while "◀" is being displayed.The SHUTTLE HOLD indicator lights up, and even if the shuttle dial is now released, reverse playback continues at the current speed.

- Turn the jog dial counter-clockwise.

"◀◀" appears in the operation display area and the speed of reverse playback increases.

- Turn the jog dial clockwise.

"◀II" appears in the operation display area and the speed of reverse playback decreases.

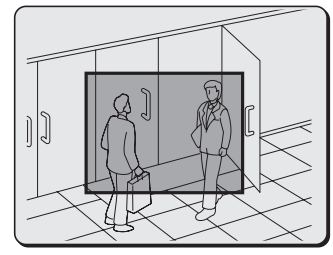
(2) Returning to normal playback.

Press the [SHUTTLE HOLD] button to turn off SHUTTLE HOLD indicator. Turn the shuttle dial either clockwise or counter-clockwise to display "▶" in the operation display area.
Normal video playback is restored.

Enlarging the playback video

1 Press the [ZOOM] button during playback.

Zoom indicator lights and a blue zoom frame appears in the center of the screen.



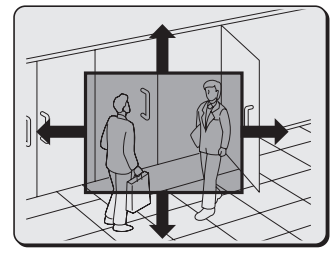
2 Move the zoom frame to the area to be magnified.

- Turn the jog dial clockwise to move the zoom frame to the right.
  Turn the jog dial counter-clockwise to move the zoom frame to the left.

- Turn the shuttle dial clockwise to switch to vertical movement.

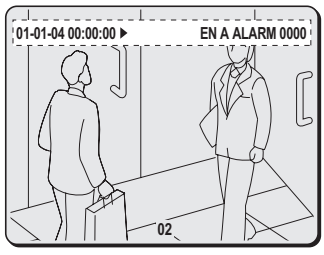
Now, when the jog dial is turned clockwise, the zoom frame moves down; when turned counter-clockwise, the zoom frame moves up.

In this way, move the zoom frame to enclose the area of video to be magnified.



3 Turn the shuttle dial clockwise.

The area enclosed by the zoom frame is magnified (by a factor of 2).



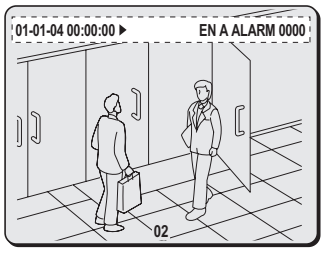
NOTE

- If the area of the screen is to be magnified or there is no need to move the zoom frame vertically, turn the shuttle dial twice in the clockwise direction to enlarge the enclosed area.

Returning to normal magnification

4 Press the [ZOOM] button.

Magnification is cancelled and the display returns to the normal screen. ZOOM indicator turns off.



NOTE

- Magnification is not possible during quad and multi 6 screen display.

CAUTION

- Magnification is not possible during the monitoring of camera video.
- Magnified video has a slightly coarser appearance when compared with normal video.

Viewing still images

1 Press the [STILL] button during playback.

The STILL indicator lights up and playback video is paused. The symbol " ⏸ " appears in the operation display area.

To resume playback

2 Press the [STILL] button once again.

Normal playback is restored.

Performing frame advance (forward or reverse)

1 Turn the jog dial clockwise or counter-clockwise while playback is paused.

Clockwise: The still image is moved forward by one frame or field.
Counter-clockwise: The still image is moved back by one frame or field.

NOTE

- The jog dial can be turned to increase the speed of frame advance.

CAUTION

- When the images from normal recording area and alarm recording area are played back in succession, the quality of the picture may drop momentarily as playback switches from one recording area to another.
- If normal, fast-forward, or fast-rewind playback is carried out either for playback during alarm recording or for continuous playback from the normal recording area and alarm recording area, the image may seem to have paused in certain cases.

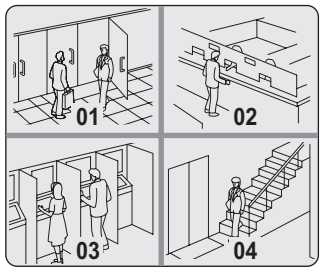
Playing video on multiple screens

If you are recording video from a number of different cameras, the following procedures can be used to play the recorded video in multi-screen format.

Playing video on quad screens

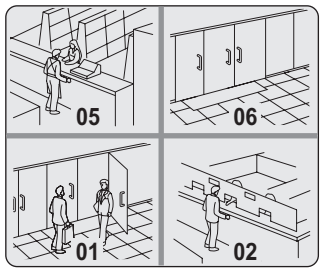
1 Press the [QUAD] button during playback.

The QUAD indicator lights up and the monitor display is divided in four.



2 Press the [QUAD] button.

Each time this button is pressed, the content of the split screen will toggle between video from cameras No. 1 through No. 4 and video from cameras No. 5, No. 6, No. 1, and No. 2.



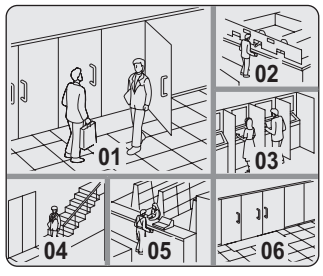
■ **Returning to full screen display**

Press the appropriate [CAMERA SELECT] button.

Playing video on six screens

1 Press the [MULTI] button during playback.

The MULTI indicator lights up and the monitor display is divided in six.



■ **Returning to full screen display**

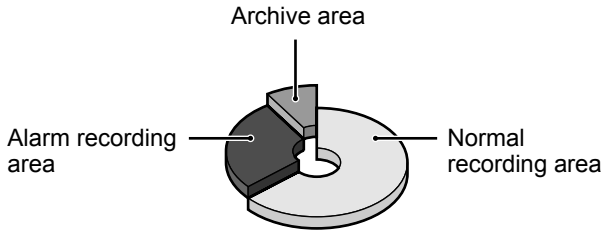
Press the appropriate [CAMERA SELECT] button.

NOTE

- In the case of both quad and multi 6 screen display, you can change the position in which playback video is displayed. (→P.87)

5 SEARCHING FOR RECORDED VIDEO

Images stored in the normal recording area, alarm recording area or archive area can be located by searching and can then be played back.Use one of the following five search methods locate the required video.



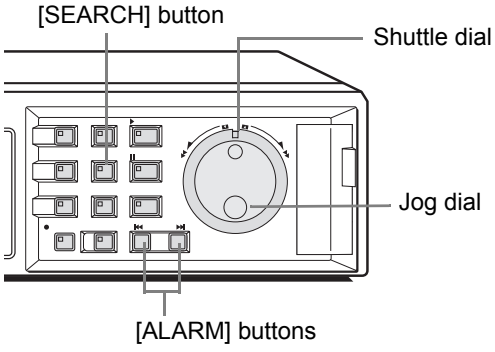
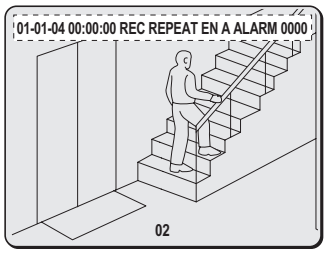
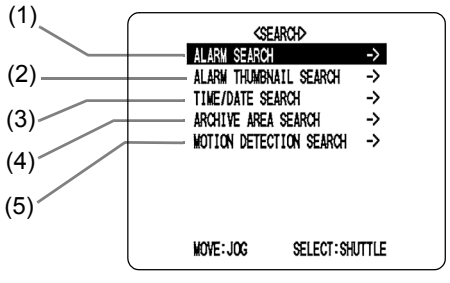


Image to be searched



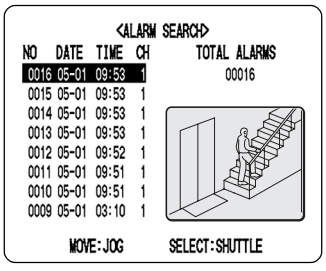
Searching from the <SEARCH> screen



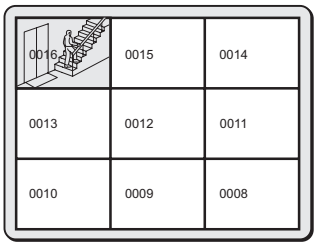
NOTE

- During the playback of video, you can use the front-panel buttons, the shuttle dial, and the jog dial to perform operations such as pause and fast-forward.

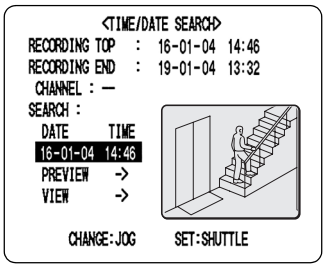
(1) ALARM SEARCH (→P.27)
Lets you search and playback alarm video from the recording list.



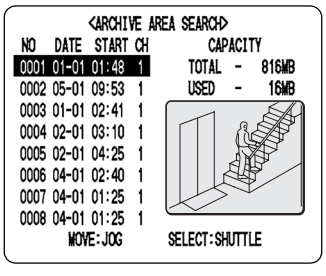
(2) ALARM THUMBNAIL SEARCH (→P.28)
Lets you search and playback alarm video using a thumbnail list.



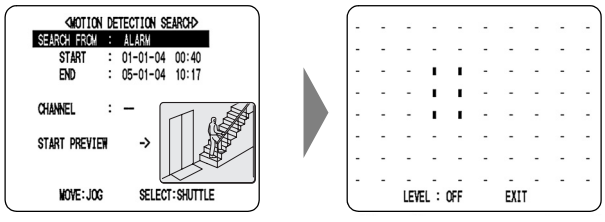
(3) TIME/DATE SEARCH (→P.28)
Lets you search and playback recorded video based on date and time.



(4) ARCHIVE AREA SEARCH (→P.30)
Lets you playback video that has been stored in the archive area.



(5) MOTION DETECTION SEARCH (→P.30)
Lets you search and playback video of moving objects detected by motion sensors.



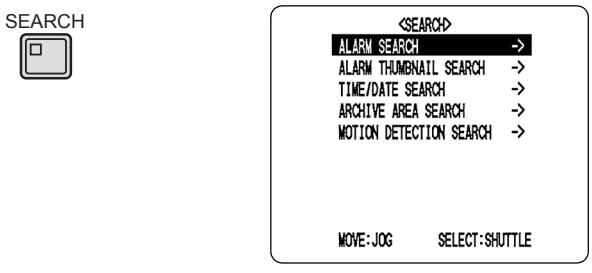
OPERATION

Alarm search

Use the following procedure to search and playback all video stored in the alarm recording area. If pre-alarm video is being recorded, playback will start from immediately before the alarm.

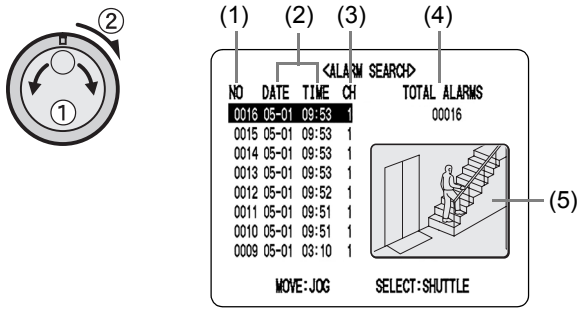
1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The SEARCH indicator lights up and the <SEARCH> screen is displayed.



2 Turn the jog dial to select "ALARM SEARCH", and then turn the shuttle dial clockwise.

The <ALARM SEARCH> screen is displayed.
This screen lists the eight most-recent alarm recordings.



(1) NO:
Indicates the alarm number.

(2) DATE/TIME:
Indicates the date and time at which the alarm video was recorded.

(3) CH:
Indicates the alarm video's channel (or camera number).

(4) TOTAL ALARMS:
Indicates the total number of alarm video recordings.

(5) Preview:
Displays the selected alarm video.

3 Turn the jog dial to move the cursor and select the video for playback.

A preview of the selected alarm video is displayed in the preview screen. In this case, the video from the instant of alarm occurrence is displayed.

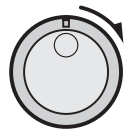
- **To display the next or previous recording**
  Turn the jog dial clockwise or counter-clockwise accordingly.

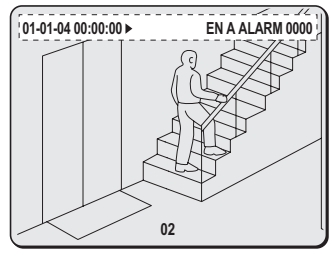
NOTE

- **To leave search mode**
  Press the [SEARCH] button. SEARCH indicator turns off.

4 Turn the shuttle dial clockwise.

The selected recording is played back in full screen mode.



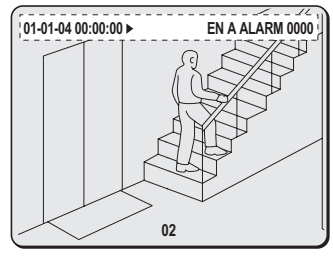


■ To view pre-alarm video

After beginning playback of an alarm recording identified by an alarm search, use the shuttle dial to reverse playback.

To view alarm video before or after the current playback

1 Press the appropriate [ALARM] button during playback.



- Each time the "⏮" button is pressed, playback will skip to the preceding alarm video recording.
- Each time the "⏭" button is pressed, playback will skip to the subsequent alarm video recording.

NOTE

- When playback is performed after an alarm search, the frame at the start and end of each alarm recording will be paused.
  Press the appropriate [ALARM] button to play the previous or next alarm recording.
- You can use the front-panel buttons, the shuttle dial, and the jog dial to perform operations such as pause and fast-forward.

Alarm thumbnail search

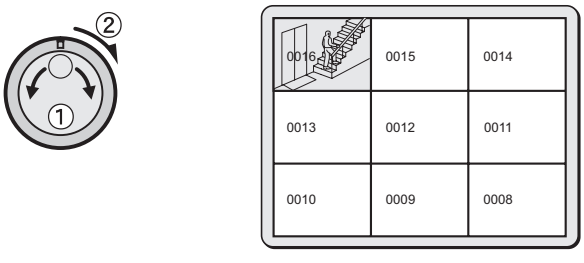
Use the following procedure to display all of the alarm recordings stored in the alarm recording area as thumbnails list.

1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The SEARCH indicator lights up and the <SEARCH> screen is displayed.

2 Turn the jog dial to select “ALARM THUMBNAIL SEARCH”, and then turn the shuttle dial clockwise.

The nine most-recent alarm recordings are displayed. An alarm number is indicated together with each alarm recording, and the number of the currently selected recording will flash.



3 Turn the jog dial to move the cursor and select the alarm recording for playback.

The alarm number for the selected recording will start to flash.

- **To display the next or previous recording**
  Turn the jog dial clockwise or counter-clockwise accordingly.

NOTE

- **To leave search mode**
  Press the [SEARCH] button. SEARCH indicator turns off.

4 Turn the shuttle dial clockwise.

The selected recording is played back in full screen mode.

CAUTION

- In the same way as for alarm searching, playback is only possible within each individual alarm recording. Press the appropriate [ALARM] button to play the previous or next recording.
- You can use the front-panel buttons, the shuttle dial, and the jog dial to perform operations such as pause and fast-forward.

Time/date search

Use the following procedure to play a recording from the normal recording area (i.e., a normal recording or timer recording) or alarm recording area by specifying its date and time.

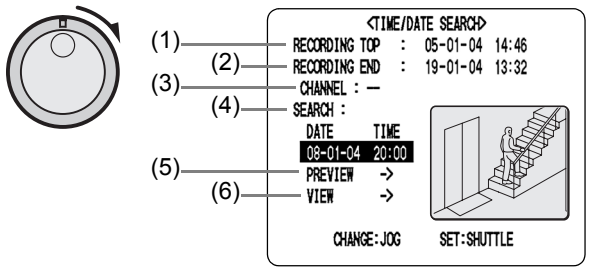
1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The SEARCH indicator lights up and the <SEARCH> screen is displayed.

2 Turn the jog dial to select “TIME/DATE SEARCH”.

3 Turn the shuttle dial clockwise.

The <TIME/DATE SEARCH> screen is displayed.



(1) RECORDING TOP:
Indicates the date/time of the earliest video recording.

(2) RECORDING END:
Indicates the date/time of the most-recent video recording.

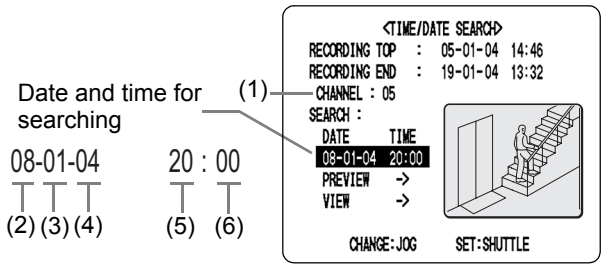
(3) CHANNEL:
Used to enter the channel (or camera number) for playback.

(4) SEARCH:
Used to enter the date/time of the recording to be played.

(5) PREVIEW:
Select this option and turn the shuttle dial clockwise to display the preview screen.

(6) VIEW:
Select this option and turn the shuttle dial clockwise to play the recording.

Example: To search for a recording from camera 5 from 8 pm on 8 January 2004



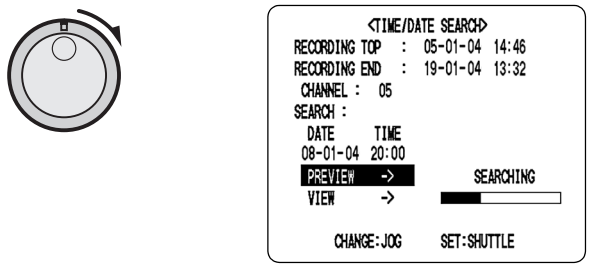
Turn the jog dial to select “CHANNEL”.

(1) Turn the shuttle dial clockwise, turn the jog dial to select “05”, and then turn the shuttle dial clockwise once again.
(2) Turn the shuttle dial clockwise, and then turn the jog dial to change to “08” (day).
(3) Turn the shuttle dial clockwise, and then turn the jog dial to change to “01” (month).
(4) Turn the shuttle dial clockwise, and then turn the jog dial to select “04” (year).
(5) Turn the shuttle dial clockwise, and then turn the jog dial to select “20” (hour).
(6) Turn the shuttle dial clockwise, turn the jog dial to change to “00” (minutes), and then turn the shuttle dial clockwise once again.

The cursor moves to “PREVIEW”.

4 Turn the shuttle dial clockwise.

After searching, the recording for the date and time settings is displayed in the preview screen.



- **If no recording exists for the specified time**
  The closest recording to the specified time is displayed.
- **To leave search mode**
  Press the [SEARCH] button. The normal screen is displayed.

5 Turn the jog dial clockwise to select “VIEW”, and then turn the shuttle dial clockwise.

The selected recording is played back on the full screen.

NOTE

- The retrieved video can be displayed on the full screen without displaying the preview screen by entering the date and time, and by then selecting “VIEW”.
- You can use the front-panel buttons, the shuttle dial, and the jog dial to perform operations such as pause and fast-forward.
- If “CHANNEL” is set to “- -” and playback is started, this will take place on the multi 6 screen.

Archive area search

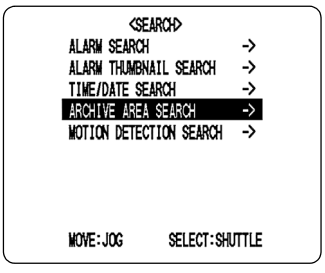
Use the following procedure to playback video that has been stored in the archive area.

1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The SEARCH indicator lights up and the <SEARCH> screen is displayed.

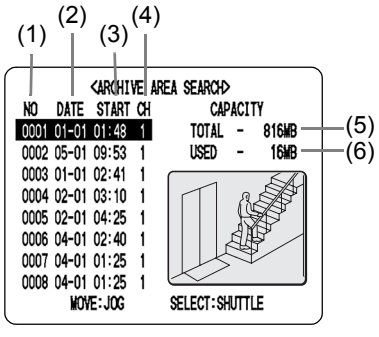
SEARCH

2 Turn the jog dial to select “ARCHIVE AREA SEARCH”.



3 Turn the shuttle dial clockwise.

The <ARCHIVE AREA SEARCH> screen is displayed. This screen lists the eight most-recent recordings in the order in which archiving was performed.



(1) NO: Indicates the archive number.
(2) DATE: Indicates the date of recording.
(3) START: Indicates the start time for the recording.
(4) CH: Indicates the channel (or camera number) for the recording.
(5) TOTAL: Indicates the total capacity of the archive area.
(6) USED: Indicates the amount of the archive area that has been used.

4 Turn the jog dial to select the video for playback.

The selected image is displayed on the preview screen.

- **To display the next or previous recording**
  Turn the jog dial clockwise or counter-clockwise accordingly.

NOTE

- Up to eight recordings can be displayed in the <ARCHIVE AREA SEARCH> screen.
- **To leave search mode**
  Press the [SEARCH] button. SEARCH indicator turns off.

5 Turn the shuttle dial clockwise.

The selected recording is played back on the full screen.

Motion detection search

By setting the motion sensor for recordings from the normal recording area (i.e., normal recordings and timer recordings) or alarm recording area, variations from these recordings as a result of the presence of an intruder or the like can be detected, and the corresponding video can be played back.

NOTE

- When a camera number (or channel) is specified, searching will only be carried out for that camera.

1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

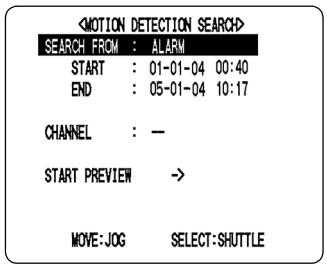
SEARCH indicator lights and <SEARCH> screen is displayed.

SEARCH

OPERATION

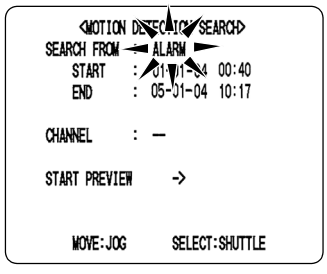
2 Turn the jog dial to select “MOTION DETECTION SEARCH”, and then turn the shuttle dial clockwise.

The <MOTION DETECTION SEARCH> screen is displayed.



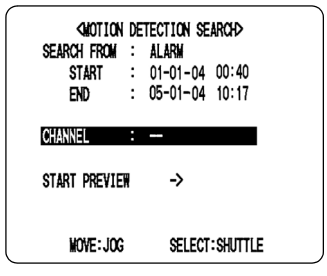
3 Turn the jog dial to select “SEARCH FROM”, and then turn the shuttle dial clockwise.

The ALARM indicator starts to flash.



4 Turn the jog dial to select a search area, and then turn the shuttle dial clockwise.

(Example: Normal)
The cursor moves to “CHANNEL”.

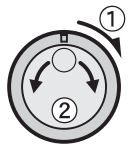


[Settings] (◆indicates the default setting)

Setting	Description
◆ALARM	Searching will only be performed for recordings in the alarm recording area.
NORMAL	Searching will only be performed for recordings in the normal recording area.
ALARM & NORMAL	Searching will be performed for recordings in the alarm recording area and normal recording area.

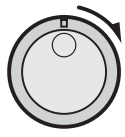
5 Turn the shuttle dial clockwise, and then turn the jog dial to select a camera number.

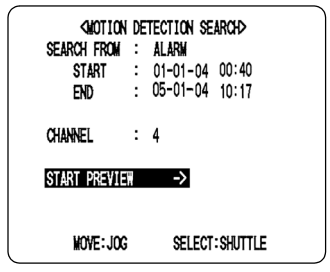
(Selection example: 4)



6 Turn the shuttle dial clockwise.

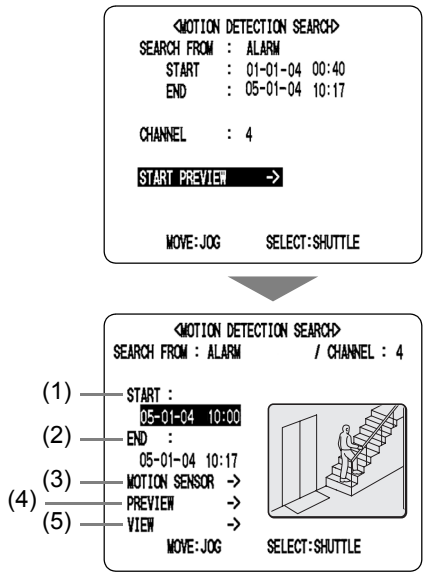
The cursor moves to “START PREVIEW”.





7 Turn the shuttle dial clockwise.

The screen changes and the preview screen for Camera No. 4 appears.



(1) START:
Indicates the date and time of recording of the first image in the selected recording area(s).

(2) END:
Indicates the date and time of recording of the final image in the selected recording area(s).

(3) MOTION SENSOR:
Indicates the motion sensor setting.

(4) PREVIEW:
Displays the selected start image.

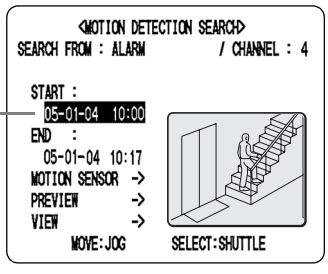
(5) VIEW:
Plays the selected recording on the full screen.

Set the motion sensor to use for searching.

1 Turn the shuttle dial clockwise while video is being displayed on the preview screen.

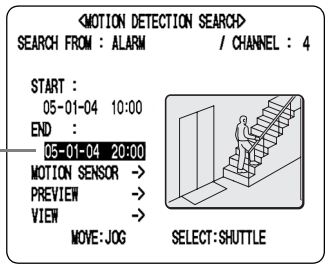
(1) Turn the jog dial to set the start date and time for motion sensing (i.e., 10 AM on the same day), and then turn the shuttle dial clockwise.
The recording for the selected time is displayed in the preview screen. The cursor moves to the “END” date and time.

Set the start date and time.



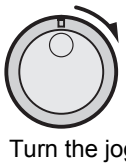
(2) Turn the shuttle dial clockwise.
(3) Turn the jog dial to set the end date and time for motion sensing (i.e., 8 PM on the same day), and then turn the shuttle dial clockwise. The cursor moves to “MOTION SENSOR”.

Set the end date and time.



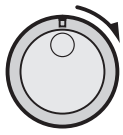
2 Turn the shuttle dial clockwise.

The motion sensor setting screen is displayed.
Use the following procedure to set motion sensors at locations where movement is to be detected and viewed.



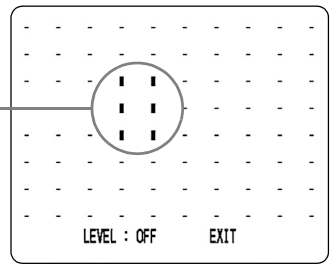
(1) Turn the jog dial clockwise or counter-clockwise to move the cursor to the position where a sensor is to be set.

(2) Turn the shuttle dial clockwise to set a motion sensor.
▌: ON, ▪: OFF



(3) Use the jog dial in the same way to set sensors at other locations.

Typical setting



NOTE

- All sensors on the same line as the cursor can be turned on simultaneously by pressing the [MENU RESET] button.

3 Turn the jog dial to move the cursor to “LEVEL”, and then turn the shuttle dial clockwise.

“OFF” flashes.

4 Turn the jog dial to select “OFF” or a sensitivity level between “1” and “10”, and then turn the shuttle dial clockwise.

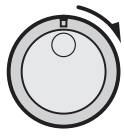
After setting the sensitivity level, the cursor moves to “EXIT”.

[Settings] ◆ indicates the default setting)

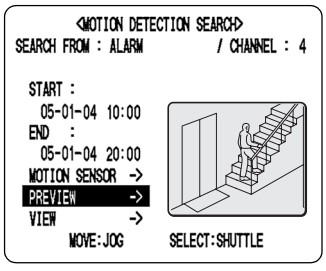
Setting	Description
◆OFF	Motion sensing is not carried out.
1 to 10	Motion sensing is carried out. Lower values correspond to higher sensitivities.

5 Turn the shuttle dial clockwise.

The display returns to the <MOTION DETECTION SEARCH> screen.



6 Turn the jog dial to select “PREVIEW”.



7 Turn the shuttle dial clockwise.

Each time the shuttle dial is turned clockwise, a different motion sensor screen will be displayed on the preview screen.

■ **If “NOT FOUND!” is displayed**

Carry out motion sensor setting again.

Viewing video detected by the motion sensor on a full screen

8 Turn the jog dial to select “VIEW”, and then turn the shuttle dial clockwise.

Normal playback will be started for the specified recording.

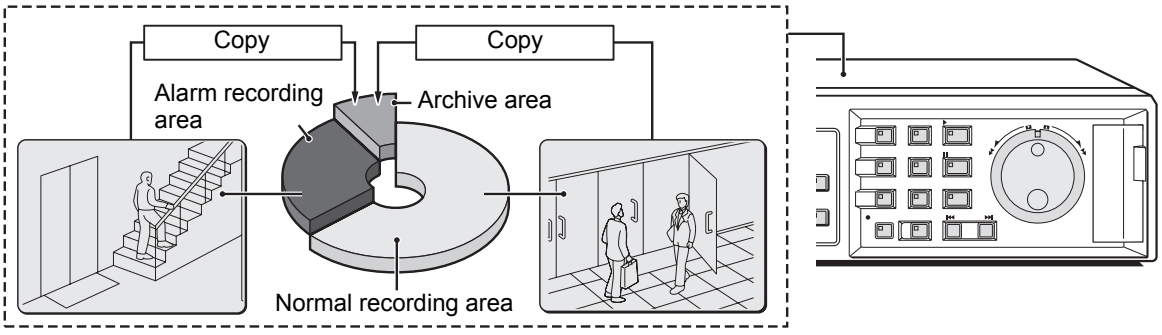
CAUTION

- By specifying a camera number (or channel) and performing “MOTION DETECTION SEARCH”, playback can be carried out for only the specified camera number.
  In such a case, the title information, date information, and/or time information may partially disappear.
- To playback a recording from a different camera, stop the current playback and then repeat the setting process from the beginning.

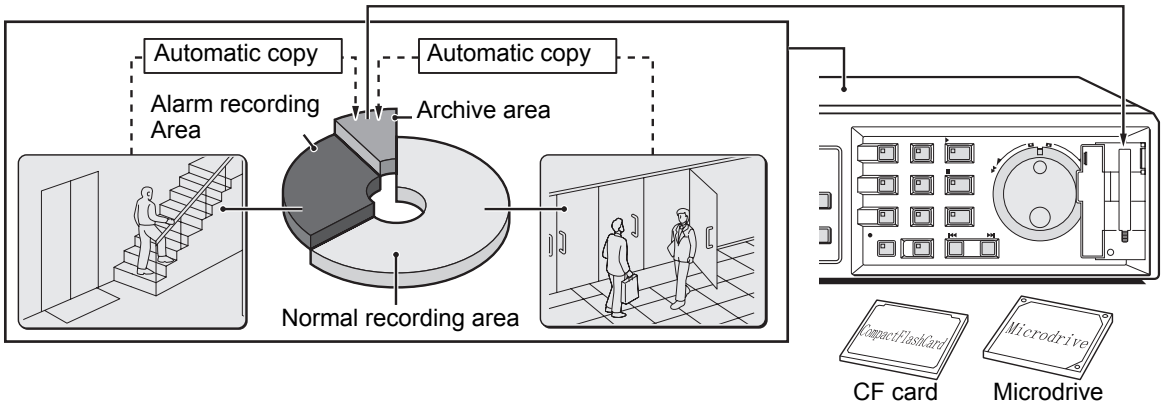
6 SAVING (COPYING) RECORDED VIDEO

Use the procedures described below to copy important video stored in the normal recording area or the alarm recording area to the digital video recorder's archive area, a CompactFlash card, or a Microdrive.

Copying video to the hard disk's archive area (→P.35)



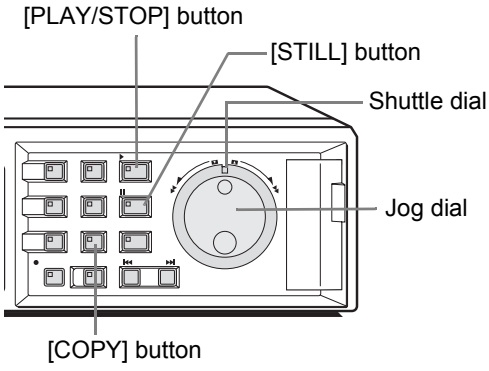
Copying video to a CompactFlash card or Microdrive (→P.36)



NOTE

- Copied data is stored as a continuous recording.
- When video is being downloaded from the normal recording area or alarm recording area to a CompactFlash card, it is temporarily stored in the archive area before being copied from there to the CompactFlash card. Note, however, that this video will not be retained in the archive area.
- If archive area becomes full, copy important video to a CompactFlash card. (→P.36)
  Following this, delete unwanted video using "AREA FULL RESET" for the archive area from "2. RECORDING AREA SET" on the <RECORD SET> sub-menu. (→P.60)

Copying video to the hard disk's archive area



1 Play video from the normal recording area or the alarm recording area.

2 Press the [STILL] button when the frame to be copied is displayed.

Playback of the video is paused.

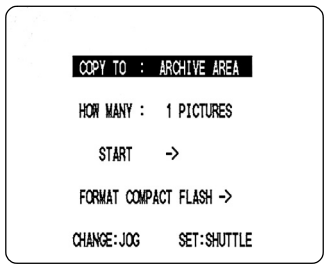
CAUTION

- Images from all cameras (i.e., 1 through 6) cannot be copied simultaneously. Use the appropriate [CAMERA SELECT] button to select the camera whose video is to be copied.

Example: Copying a specified 10-second portion of video

3 Press the [COPY] button.

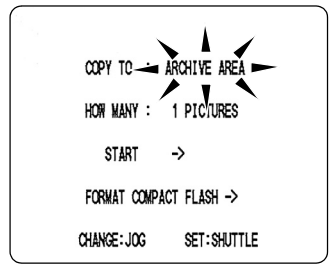
The COPY indicator lights up and the <COPY> screen is displayed.



4 Turn the jog dial to select "COPY TO", and then turn the shuttle dial clockwise.

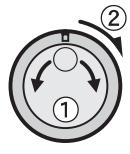
"ARCHIVE AREA" starts to flash.
[Settings] (◆ indicates the default setting)

Setting	Description
◆ARCHIVE AREA	Video will be copied to the archive area.
COMPACT FLASH	Video will be copied to a CompactFlash card.



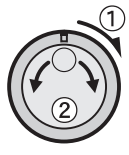
5 Turn the jog dial to select "ARCHIVE AREA", and then turn the shuttle dial clockwise.

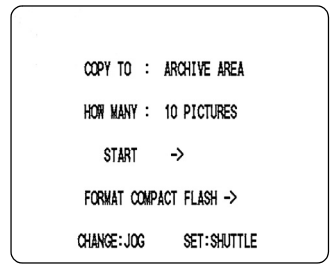
The cursor moves to "HOW MANY".



6 Turn the shuttle dial clockwise, and then turn the jog dial to set "HOW MANY" to "10".

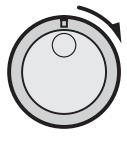
Any value between 1 and 60 can be set.

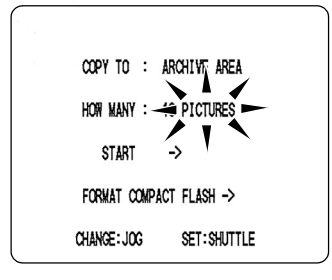




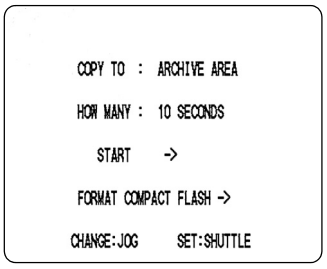
7 Turn the shuttle dial clockwise.

"PICTURES" flashes.





8 Turn the jog dial to select “SECONDS”.

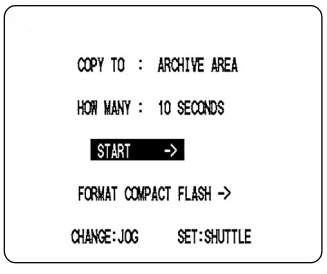


[Settings] (◆ indicates the default setting)

Setting	Description
◆PICTURES	The specified number of images after the specified location will be copied.
SECONDS	The specified duration in seconds after the specified location will be copied.
MINUTES	The specified duration in minutes after the specified location will be copied.

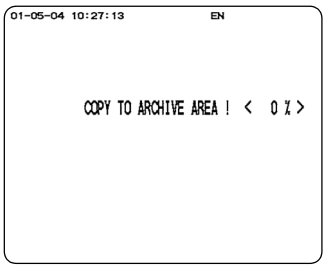
9 Turn the shuttle dial clockwise.

The cursor moves to “START”.

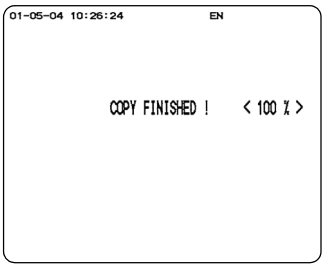


10 Turn the shuttle dial clockwise.

(1) Copying to the archive area commences.
The message “COPY TO ARCHIVE AREA!” is displayed on-screen during the copy procedure.



(2) When this procedure has been completed, “COPY FINISHED!” is displayed.

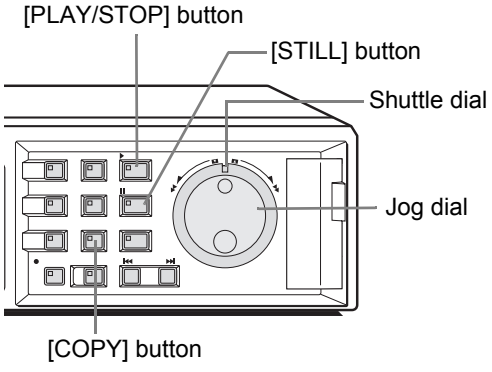


■ To cancel a copy operation

Press the [COPY] button to cancel the current copy.

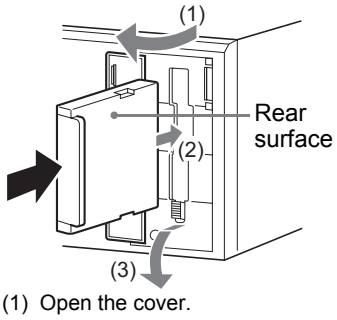
Copying normal recording area, alarm recording area, or archive area video to a CompactFlash card or Microdrive

Use the following procedure to copy video either to a Microdrive and to a CompactFlash card (Supported up to 2 GB).



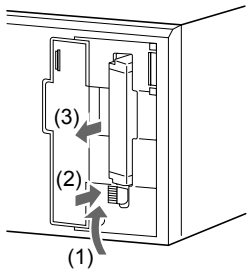
1 Insert a CompactFlash card.

Insertion method



(1) Open the cover.
(2) Ensuring that it is correctly oriented, insert the CompactFlash card into the CompactFlash card slot.
(3) Fold down the lever.

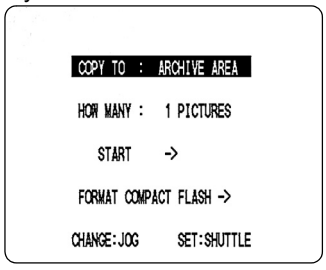
Removal method



(1) Raise the lever.
(2) Push in the lever.
(3) Remove the CompactFlash card.

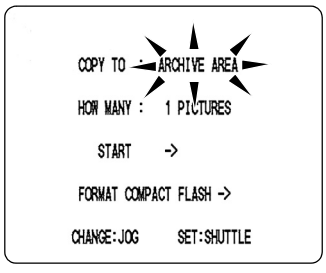
2 Pause playback on the image to be copied, and then press the [COPY] button.

The <COPY> screen is displayed.



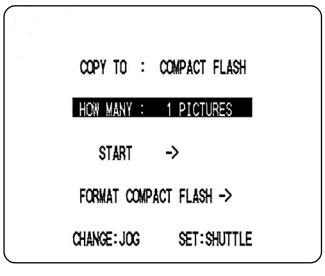
3 Turn the jog dial to select “COPY TO”, and then turn the shuttle dial clockwise.

“ARCHIVE AREA” flashes.



4 Turn the jog dial to select “COMPACT FLASH”, and then turn the shuttle dial clockwise.

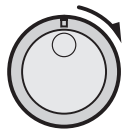
The cursor moves to “HOW MANY”.

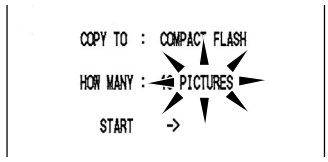


5 Turn the shuttle dial clockwise, and then turn the jog dial to set “HOW MANY”.

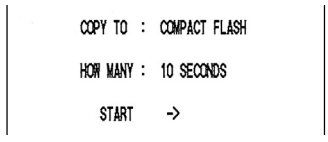
6 Turn the shuttle dial clockwise.

“PICTURES” flashes.





7 Turn the jog dial to select “SECONDS”.



[Settings] (◆ indicates the default setting)

Setting	Description
◆PICTURES	The specified number of images after the specified location will be copied.
SECONDS	The specified duration in seconds after the specified location will be copied.
MINUTES	The specified duration in minutes after the specified location will be copied.

NOTE

- Up to 40,000 images can be copied in a single operation. When specifying the number of images using “MINUTES”, copying will end at the point at which 40,000 images are copied.
- Alarm recordings can only be copied one event at a time.

8 Turn the shuttle dial clockwise.

The cursor moves to “START”.

9 Turn the shuttle dial clockwise.

(1) Copying to the CompactFlash card starts.The message “COPY TO COMPACT FLASH!” is displayed on-screen at this time.

(2) When this has been completed, “COPY FINISHED!” is displayed.

■ **To cancel a copy operation**
Press the [COPY] button to cancel the current copy.

CAUTION

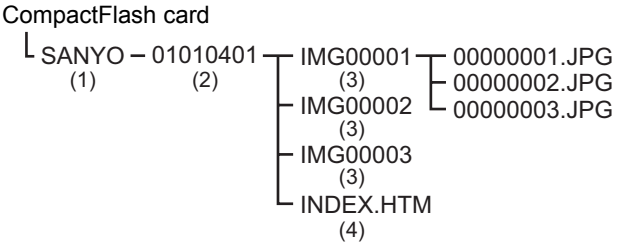
- If the CompactFlash card becomes full during the copying process, the message “CARD FULL!” will be displayed and copying will end. Press any button to return to the normal screen. The copy procedure should now be repeated using a new CompactFlash card.

NOTE

- When images are copied directly from the normal recording area or the alarm recording area to a CompactFlash card, these images will be temporarily copied to the archive area. Note, however, that this data will be automatically deleted when copying has been completed.
- When copying images to a CompactFlash card, approximately 15 seconds will be required for 1 MB.

Viewing images copied to a CompactFlash card on a PC

When images are copied to a CompactFlash card, following folders are created and images are saved within them.



(1) A folder with the name “SANYO” is created inside the root directory.
(2) Within this, folders are created based on the date of copied images or video.
(3) Within each date folder, sub-directories are created in sequence starting with “IMG00001”. Each sub-directory can hold up to 200 individual images.
(4) To view images on your PC, open the file “INDEX.HTM” found in each date folder using a browser (i.e., Internet Explorer 5.0 or later).You will then be able to view the JPEG images individually or in slide show format, etc.

NOTE

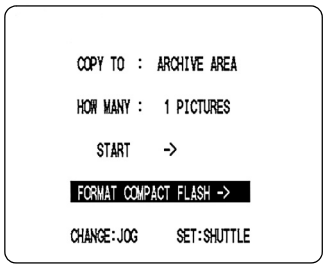
- **Playing video with audio that has been copied to a CompactFlash card**
video with audio can be played using DVR Viewer. For more details, refer to the “Manual for Remote Operation by Network Connection”.

CAUTION

- **JPEG images**
JPEG files contain field images, and for this reason, they will be 50% compressed in the horizontal direction when viewed using commercially-available image processing software. These files should, therefore, be opened using the INDEX.HTM file.
- **Images copied to a CompactFlash card**
Since images copied to a CompactFlash card contain embedded coding for the detection of manipulation, these codes can be detected using a suitable software application. For more information, contact the dealer from whom you purchased this digital video recorder.

Formatting a CompactFlash card

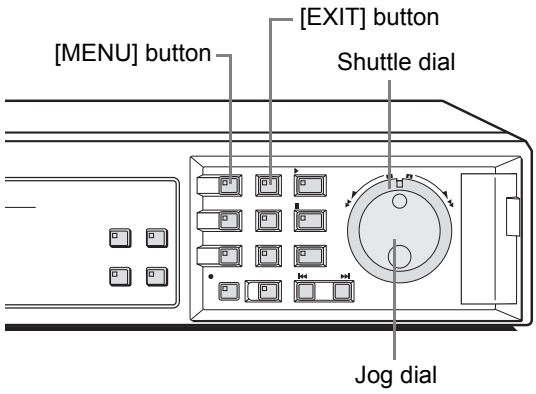
Select “FORMAT COMPACT FLASH” to format a CompactFlash card or Microdrive.



CAUTION

- Be sure to use CompactFlash cards that have been formatted using FAT16. The digital video recorder will not recognize FAT32 CompactFlash cards.

1 MENU CONFIGURATION AND OPERATIONS

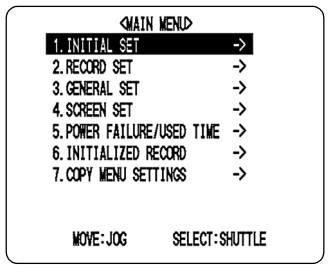


This section describes the menu configuration and the menu items to be selected for each operation.

Basic menu operations

1 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.

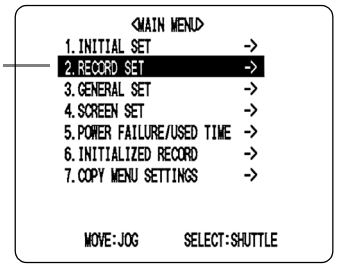

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

Moving from the <MAIN MENU> to a sub-menu or setting screen

2 Turn the jog dial to select a menu.

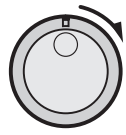
(Example: 2. RECORD SET)
When you move the cursor, the selected item is displayed in reverse.

Cursor position


<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

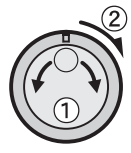
3 Turn the shuttle dial clockwise.

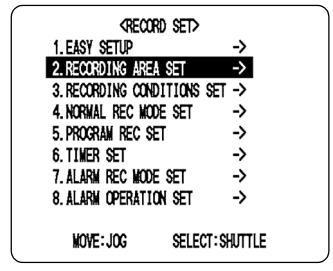
The sub-menus appear.
The cursor is positioned on the first setting item.

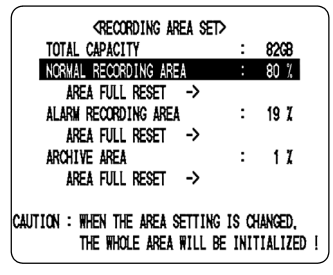


4 Turn the jog dial to select a sub-menu, and then turn the shuttle dial clockwise.

The corresponding setting screen is displayed, and the cursor is positioned on the first item.

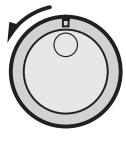



<RECORD SET>
1. EASY SETUP ->
2. RECORDING AREA SET ->
3. RECORDING CONDITIONS SET ->
4. NORMAL REC MODE SET ->
5. PROGRAM REC SET ->
6. TIMER SET ->
7. ALARM REC MODE SET ->
8. ALARM OPERATION SET ->
MOVE:JOG SELECT:SHUTTLE


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

■ To return to the previous menu

Turn the shuttle dial counter-clockwise.



5 Press the [EXIT] button.

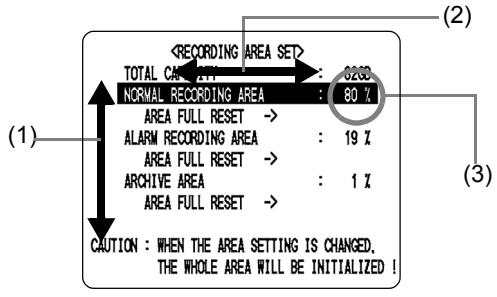
The setting procedure is ended and the display returns to the normal screen.

NOTE

- Menus can be opened even during the recording process.
- Menu settings cannot be changed during the recording process. Accordingly, recording will have to be stopped in order to allow changes to be made.

Movement and confirmation in sub-menus and setting screens

The jog dial and shuttle dial are used for movement and confirmation in sub-menus and setting screens.



(1)	To move the cursor up or down	Turn the jog dial.	
(2)	To move the cursor right or to confirm an item	Turn the shuttle dial clockwise.	
(3)	To change a setting value	Turn the jog dial.	

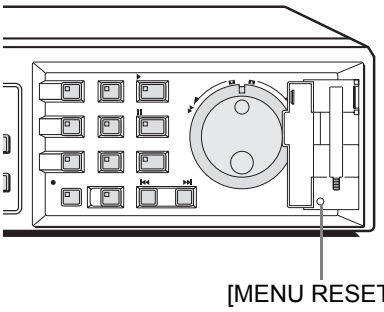
Restoring menu setting items to their default values

Use the following procedure to restore only those items in the displayed setting screen to their default values.

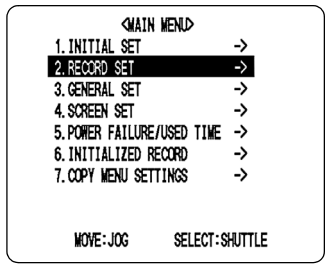
1 Open the screen containing the items to be returned to default settings.

2 Press the [MENU RESET] button.

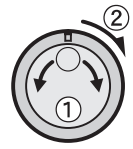
The displayed settings are restored to their default values.



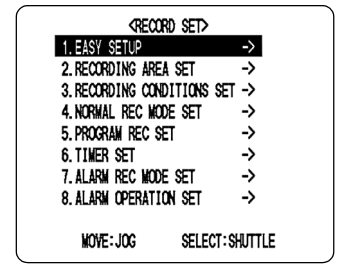
Main menu



Turn the jog dial to select the item to be set, and then turn the shuttle dial clockwise.

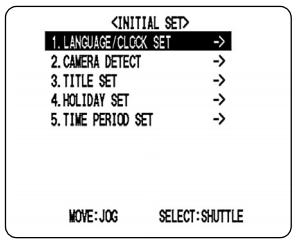
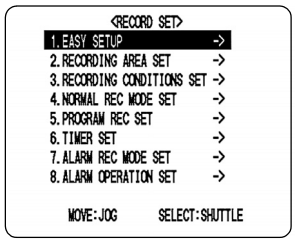
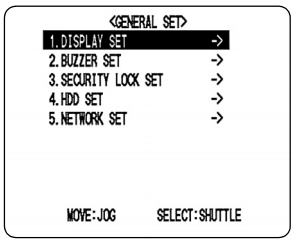


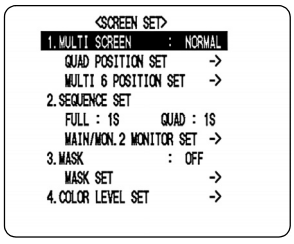
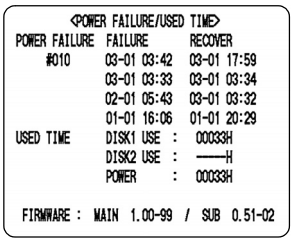
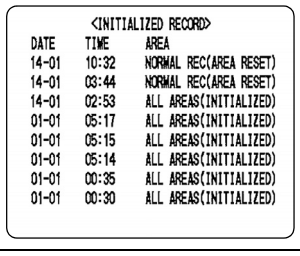
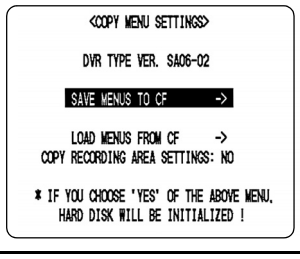
Sub menu



Sub-menu configuration

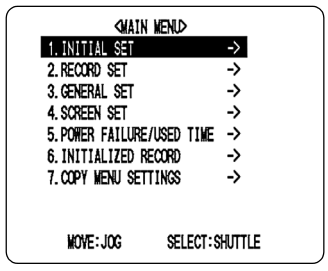
The following table indicates the sub-menus or setting screens displayed by selecting items from the <MAIN MENU>.
The [MENU] button can be used in any sub-menu to scroll through each of the sub-menus in sequence.

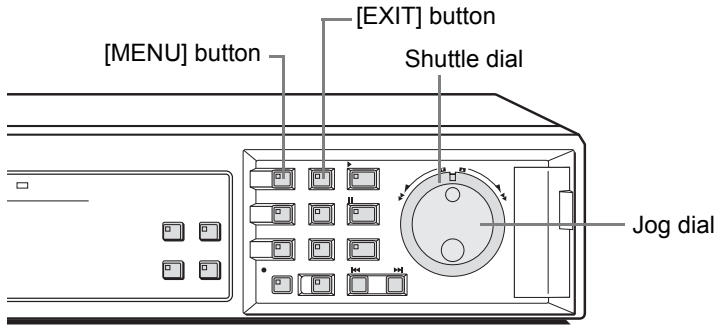
	Sub menu	Setting item	Settings or display content
1	**<INITIAL SET>** This sub-menu is used to make initial settings. 	(1) LANGUAGE/CLOCK SET (→P.43)	Set the language displayed on the monitor. Set the date and time displayed on the normal screen and summer time. Aligns the time of all digital video recorders in situations where multiple recorders are connected.
		(2) CAMERA DETECT (→P.46)	Automatically detects cameras that have been connected.
		(3) TITLE SET (→P.47)	Sets a unique title for each camera so that these can be displayed on-screen.
		(4) HOLIDAY SET (→P.48)	Sets specific dates as holidays to have the operation for Sunday used on those days also.
		(5) TIME PERIOD SET (→P.50)	Sets a time period for automatic camera selection and the switching of masking and motion-sensor operations.
2	**<RECORD SET>** This sub-menu is used to set recording and alarms. 	(1) EASY SETUP (→P.53)	Makes basic settings based on a number of days or recording rate.
		(2) RECORDING AREA SET (→P.57)	Displays the total capacity of the hard disk. Sets the normal recording area, the alarm recording area, the archive area and auto delete.
		(3) RECORDING CONDITIONS SET (→P.60)	Sets whether overwriting is to be performed (by deleting old video) or recording is to be stopped when any of the hard disk's recording areas become full.
		(4) NORMAL REC MODE SET (→P.62)	Sets the recording quality, audio recording, the recording rate, and program recording.
		(5) PROGRAM REC SET (→P.63)	Sets program recording for cameras and the program recording rate.
		(6) TIMER SET (→P.65)	Makes timer settings so that operations can be started at a specified time or on a specified day.
		(7) ALARM REC MODE SET (→P.68)	Sets alarm recording, pre-alarm recording, and motion sensors.
		(8) ALARM OPERATION SET (→P.74)	Makes settings for alarms and displays used to detect intruders.
3	**<GENERAL SET>** This sub-menu is used to make settings for monitor display and the system. 	(1) DISPLAY SET (→P.76)	Sets display switching for the operation display area. Enables "VIDEO LOSS" to be displayed when the camera video is interrupted. Either "REC STOP" or "VIDEO LOSS" can also be selected for the rear-panel terminal.
		(2) BUZZER SET (→P.78)	Turns the buzzer on or off.
		(3) SECURITY LOCK SET (→P.79)	Sets passwords that restrict use of the digital video recorder to administrators and designated users, thus preventing unauthorized operation.
		(4) HDD SET (→P.81)	Allows confirmation of hard disk capacity and performs initialization. Makes the required settings for mirroring.
		(5) NETWORK SET (→P.82)	Makes settings to allow remote setting of the digital video recorder's menu items and remote monitoring of video from a PC via a network (LAN).
		(6) RS-485 SET (→P.85)	Makes settings when using RS-485.

	Sub menu	Setting item	Settings or display content
4	**<SCREEN SET>** This sub-menu is used to make screen settings for monitoring. 	(1) MULTI SCREEN (→P.87)	Specifies the positions of video from different cameras on the quad and multi 6 screens.
		(2) SEQUENCE SET (→P.89)	Sets the switching interval for automatic camera selection. Selects the cameras to be displayed on both the main monitor and monitor 2 as a result of automatic selection.
		(3) MASK (→P.92)	Sets video from individual cameras to be masked by a gray pattern when it is not to be monitored. Turns channel 01 through channel 06 on and off, and sets time synchronization.
		(4) COLOR LEVEL (→P.93)	Adjusts the color of video displayed on monitors.
5	**<POWER FAILURE/USED TIME>** This sub-menu is used to confirm the date and time of power failures and the amount of hard disk usage. 	(→P.95)	Provides a display of the date and time of power failures and the amount of hard disk usage.
6	**<INITIALIZED RECORD>** This sub-menu is used to display a hard-disk initialization and area-reset log. 	(→P.96)	Displays a record of hard-disk initialization and each area resetting.
7	**<COPY MENU SETTINGS>** This sub-menu is used to store or load menu settings 	(→P.97)	Saves and loads menu settings.

2 INITIAL SET

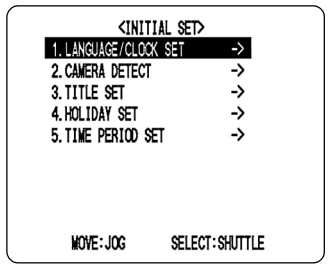
Main Menu

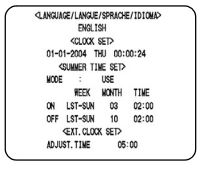
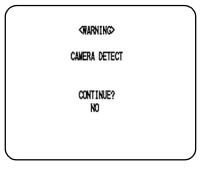
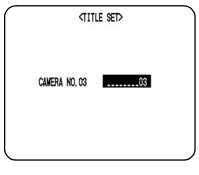
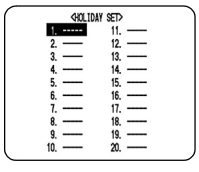
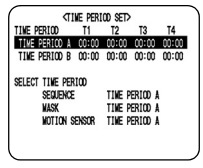

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE



Initial settings

The <INITIAL SET> is used to make the following setting.



	Setting	Description	Ref.
1		**<LANGUAGE/CLOCK SET>** Set the language displayed on the monitor. Set the date and time displayed on the normal screen and summer time. Aligns the time of all digital video recorders in situations where multiple recorders are connected.	P.13 P.43
2		**<CAMERA DETECT>** Automatically detects cameras that have been connected.	P.46
3		**<TITLE SET>** Sets a unique title for each camera so that these can be displayed on-screen.	P.47
4		**<HOLIDAY SET>** Sets specific dates as holidays to have the operation for Sunday used on those days also.	P.48
5		**<TIME PERIOD SET>** Uses a pair of time periods to set a time band for operation switching and other functions.	P.50

Setting the time

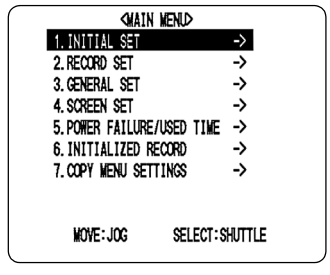
Setting of the date and time displayed on the normal screen. *
*: See P.14 for more details.

Setting the summer time

1 Press the [MENU] button.

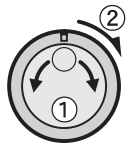
The MENU indicator lights up and the <MAIN MENU> is displayed.

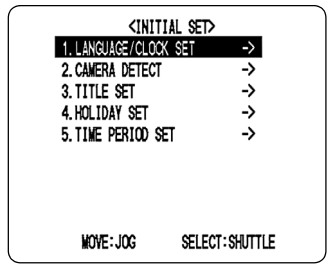
MENU


<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

2 Turn the jog dial to select “1. INITIAL SET”, and then turn the shuttle dial clockwise.

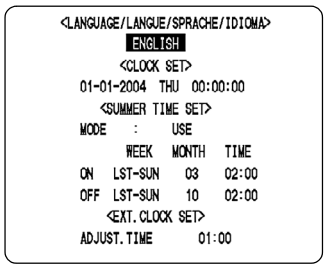
The <INITIAL SET> screen is displayed.



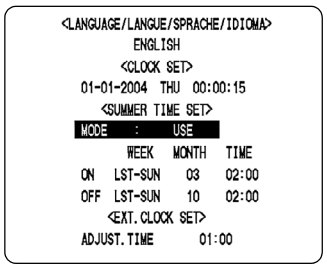


3 Turn the jog dial to select “1. LANGUAGE/CLOCK SET”, and then turn the shuttle dial clockwise.

The <LANGUAGE/LANGUE/SPRACHE/IDIOMA> screen is displayed.

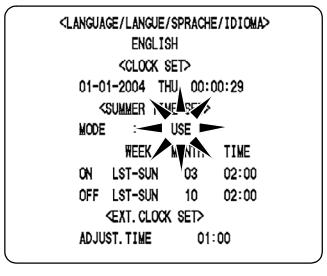


4 Turn the jog dial to select “MODE” under <SUMMER TIME SET>.



5 Turn the shuttle dial clockwise.

“USE” flashes.



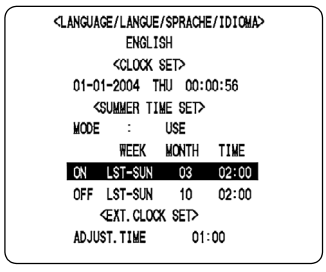
6 Turn the jog dial to change the settings.

[Settings] (◆ indicates default setting.)

Setting	Description
◆USE	Time is automatically adjusted to summer time.
NO USE	Time is not automatically adjusted to summer time.

7 Turn the shuttle dial clockwise.

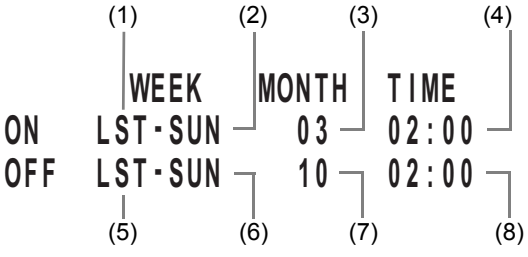
The cursor moves to the date/time at which to switch from standard time to summer time.



When “USE” is selected for <SUMMER TIME SET>

You can set the date/time at which the time is switched from standard time to summer time, and the date/time at which the time is switched back again.
The example below is the default value.

Example:
After the clock display reaches 28 March 2004, 01:59, the next clock display is 03:00, putting the clock an hour ahead.
After the clock display reaches 31 October 2004, 01:59, the next clock display is 01:00, putting the clock an hour behind (back to standard time).



(1) Sets the week for switching to summer time.
(2) Sets the day of the week.
(3) Sets the month.
(4) Sets the time.
(5) Sets the week for ending summer time.
(6) Sets the day of the week.
(7) Sets the month.
(8) Sets the time.

8 Turn the shuttle dial clockwise.

“LST” flashes.

9 Turn the jog dial to select the desired week, and then turn the shuttle dial clockwise.

The cursor moves to the day of the week.

10 Turn the jog dial to select the desired day of the week, and then turn the shuttle dial clockwise.

The cursor moves to the month.

11 Turn the jog dial to select the desired month, and then turn the shuttle dial clockwise.

The cursor moves to the time.

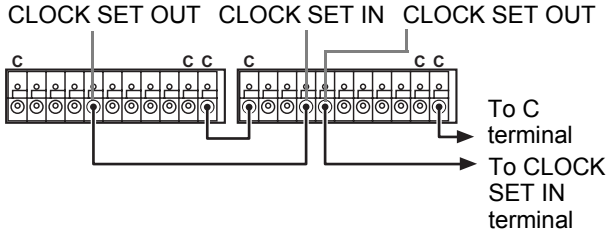
12 Turn the jog dial to select the desired time, and then turn the shuttle dial clockwise.

The cursor moves to the minutes portion of the time. Set the desired minutes in the same manner.
Use the same procedure when setting the time at which summer time is to end. The <SUMMER TIME SET> settings are now finished.

External clock setting

Alignment of the time of all digital video recorders in situations where multiple recorders are connected. (Default setting: 01:00)
At the set time, all connected recorders will be aligned to the same time to a precision of seconds.

1 Connect the CLOCK SET OUT terminal on the rear of the first digital video recorder to the CLOCK SET IN of the second recorder.

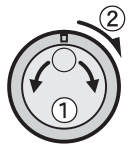


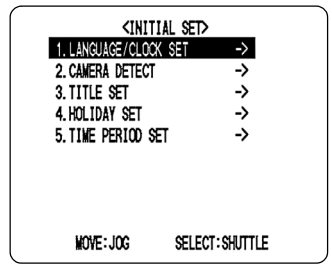
2 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.

3 Turn the jog dial to select "1. INITIAL SET", and then turn the shuttle dial clockwise.

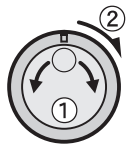
The <INITIAL SET> screen is displayed.

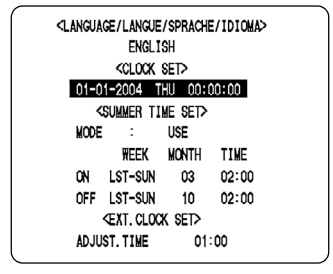




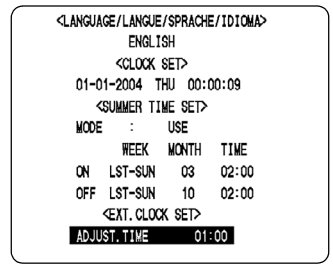
4 Turn the jog dial to select "1. LANGUAGE/CLOCK SET", and then turn the shuttle dial clockwise.

The <LANGUAGE/LANGUE/SPRACHE/IDIOMA> screen is displayed.





5 Turn the jog dial and move the cursor to "ADJUST. TIME".

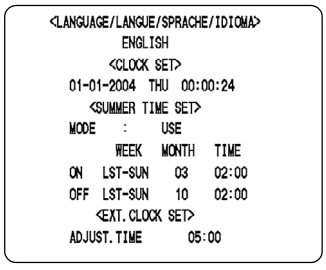


6 Turn the shuttle dial clockwise.

"01" flashes.

7 Turn the jog dial to set a time, and then turn the shuttle dial clockwise.

(Example: 05:00)



8 Press the [EXIT] button.

The setting procedure for the first digital video recorder is ended and the display returns to the normal screen.

EXIT

9 Use the same procedure to set the time on the second recorder.

CAUTION

- Set the time to the same time of first digital video recorder.

When you have finished making the settings, the display returns to the normal screen.
The default setting value is “01:00”.

NOTE

- Only an hour value can be set using “ADJUST. TIME”. It is not possible to set a value for minutes and seconds.

Detecting connected cameras

Use the following procedure to automatically detect cameras that have been connected. An “OFF” setting should be made for cameras that have not been connected.

1 Press the [MENU] button.

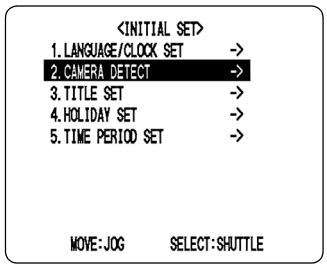
The MENU indicator lights up and the <MAIN MENU> is displayed.

MENU

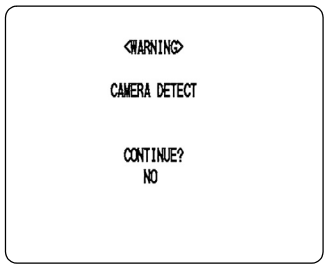
2 Turn the jog dial to select “1. INITIAL SET”, and then turn the shuttle dial clockwise.

The <INITIAL SET> screen is displayed.

3 Turn the jog dial to select “2. CAMERA DETECT”, and then turn the shuttle dial clockwise.

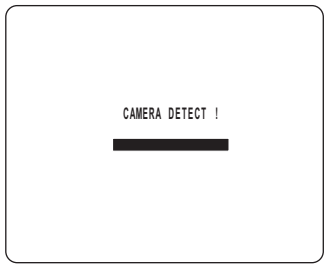


<WARNING> screen is displayed.



4 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

Connected cameras are automatically detected.
When detection has been completed, the display returns to the <INITIAL SET> screen.



Setting camera titles

Use the following procedure to set a unique title for each camera so that these titles can be displayed on-screen.

CAUTION

Titles can be up to 10 characters in length per camera.
The following characters can be used.

- Letters: A to Z
- Numbers: 0 to 9
- Symbols: - : . / * _ (space)

Example: Setting the title “HALL-1F” for Camera No. 3.

1 Press the [MENU] button.

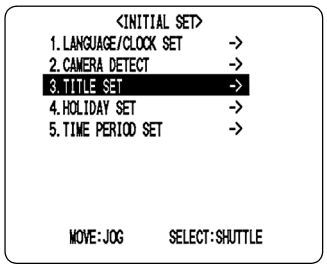
The MENU indicator lights up and the <MAIN MENU> is displayed.

2 Turn the jog dial to select “1. INITIAL SET”, and then turn the shuttle dial clockwise.

The <INITIAL SET> screen is displayed.

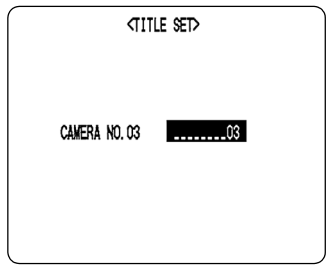
3 Turn the jog dial to select “3. TITLE SET”, and then turn the shuttle dial clockwise.

The normal monitoring screen is displayed with a title setting field in the center.



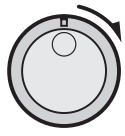
4 Press the No. 3 [CAMERA SELECT] button.

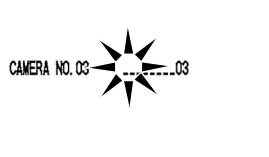
The video from Camera No. 3 is displayed on-screen.



5 Turn the shuttle dial clockwise.

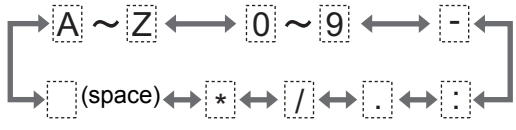
The first position for title setting flashes.

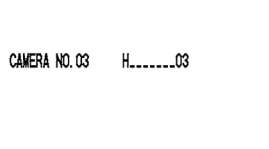




6 Turn the jog dial to select “H”.

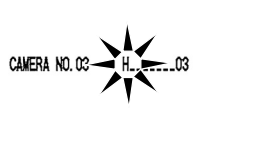
Characters change in the following sequence as the jog dial is turned.





7 Turn the shuttle dial clockwise.

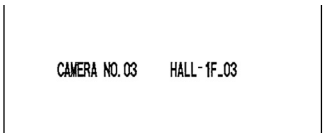
The character selection is confirmed and the cursor moves one position to the right.



NOTE

- When changing a character, move the cursor to that character by turning the shuttle dial clockwise or counter-clockwise, and then enter the required character.

8 Repeat steps 5 and 6 to enter the remaining characters.



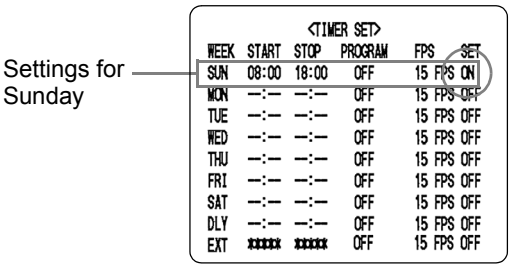
9 When you have finished making settings, press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.
The default setting is "------01" (camera No.).

Setting holidays

Use the following procedure to set specific dates as holidays to have the operation for Sunday used on those days also.
Dates such as national holidays and company off days should be set as holidays when you want those dates to have the same security as Sundays.

[Setting conditions]
Be sure to always switch "SET" to "ON" after completing timer settings for Sunday (i.e., "SUN").(→P.65)


Settings for Sunday
<TIMER SET>
WEEK START STOP PROGRAM FPS SET
SUN 08:00 18:00 OFF 15 FPS ON
MON —:— —:— OFF 15 FPS OFF
TUE —:— —:— OFF 15 FPS OFF
WED —:— —:— OFF 15 FPS OFF
THU —:— —:— OFF 15 FPS OFF
FRI —:— —:— OFF 15 FPS OFF
SAT —:— —:— OFF 15 FPS OFF
DLY —:— —:— OFF 15 FPS OFF
EXT ***** ***** OFF 15 FPS OFF

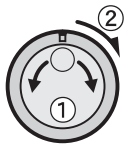
Example: Setting 17 November as a holiday

1 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.

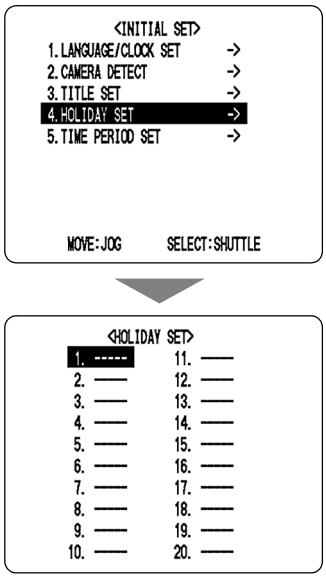
2 Turn the jog dial to select "1. INITIAL SET", and then turn the shuttle dial clockwise.

The <INITIAL SET> screen is displayed.



3 Turn the jog dial to select “4. HOLIDAY SET”, and then turn the shuttle dial clockwise.

The <HOLIDAY SET> screen is displayed with the cursor positioned on “1”.



4 Set the day and month for item No. “1”.

(1) Turn the shuttle dial clockwise to flash “--” (day).
(2) Turn the jog dial to set “--” to “17”.

(3) Turn the shuttle dial clockwise to flash “--” (month).
(4) Turn the jog dial to set “--” to “11”.

5 Turn the shuttle dial clockwise after setting.

The cursor moves to “2”.

6 Use the same procedure to set other holidays.

7 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.
The default setting is all “-----”.

CAUTION

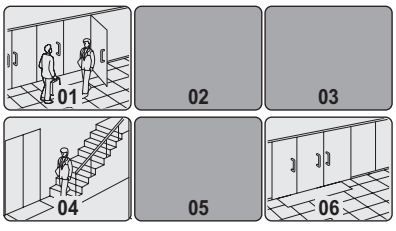
- If “DLY” is set using timer settings, timer recording on the above-mentioned holidays will also be carried out in accordance with daily settings. In other words, “DLY” includes Sundays and is given priority over other settings.

Setting time periods

A time period is setup by the two timers TIME PERIOD A and TIME PERIOD B, and the following procedure can be used to specify four different periods per day based on time period settings (for instance, early morning, morning, lunchtime, and night). For example, it is possible to set TIME PERIOD A for automatic screen selection and the period between TIME PERIOD B for the masking of monitor video using a gray pattern.

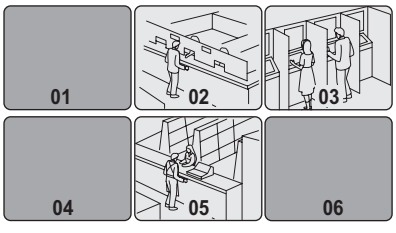
■ Morning to lunchtime: 6:00 to 11:00

Cameras No. 2, 3, and 5 are masked.



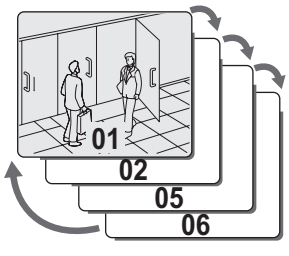
■ Lunchtime: 11:00 to 13:00

Cameras No. 1, 4, and 6 are masked.



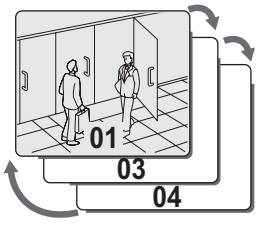
■ Lunchtime to night: 13:00 to 20:00

Cameras No. 1, 2, 5, 6 automatic selection is carried out.



■ Night to morning: 20:00 to 6:00

Cameras No. 1, 3 and 4 automatic selection is carried out.

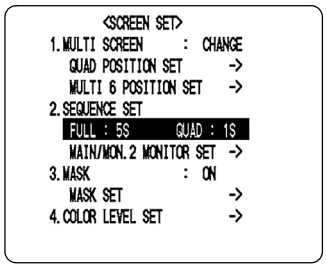


Operations during the specified time periods

The following menu settings must be made to enable operation of the time periods. After completing these settings, be sure to then carry out timer setting.

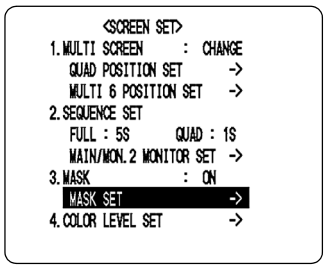
■ Setting automatic selection of camera video

Set which automatically selected camera to display video from and the switching interval.
To do this, set “SEQUENCE SET” from <SCREEN SET>. (→P.89)


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 5S QUAD : 1S
MAIN/MON. 2 MONITOR SET ->
3. MASK : ON
MASK SET ->
4. COLOR LEVEL SET ->

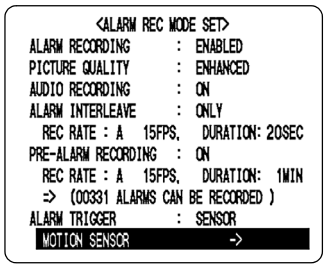
■ Masking camera video using a gray pattern

Use “MASK SET” from <SCREEN SET> to specify which cameras are to be displayed on the monitor and which are not. (→P.92)


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 5S QUAD : 1S
MAIN/MON. 2 MONITOR SET ->
3. MASK : ON
MASK SET ->
4. COLOR LEVEL SET ->

■ Alarm recording using motion sensors

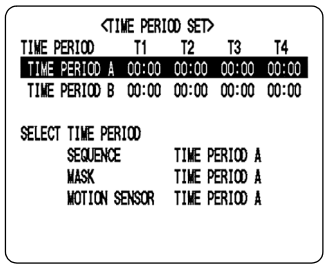
To detect camera alarms, set “MOTION SENSOR” from <ALARM REC MODE SET>. (→P.72)


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : A 15FPS, DURATION: 1MIN
=> (00331 ALARMS CAN BE RECORDED)
ALARM TRIGGER : SENSOR
MOTION SENSOR ->>

Timer period settings

Example 1: Setting periods using TIME PERIOD A and TIME PERIOD B

- **TIME PERIOD A settings**
  Set T1 to 6 AM (6:00)
  Set T2 to 11:30 AM (11:30)
  Set T3 to 1:30 PM (13:30)
  Set T4 to 6 PM (18:00)
- **TIME PERIOD B settings**
  Set T1 to 6 AM (6:00)
  Set T2 to 8 AM (8:00)
  Set T3 to 2:30 PM (14:30)
  Set T4 to 8 PM (20:00)


<TIME PERIOD SET>
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

1 Press the [MENU] button.

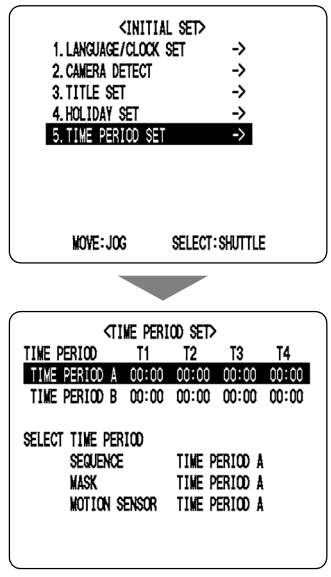
The MENU indicator lights up and the <MAIN MENU> is displayed.

2 Turn the jog dial to select “1. INITIAL SET”, and then turn the shuttle dial clockwise.

The <INITIAL SET> screen is displayed.

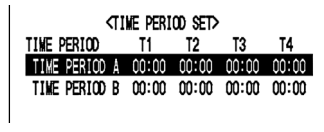
3 Turn the jog dial to select “5. TIME PERIOD SET”, and then turn the shuttle dial clockwise.

The <TIME PERIOD SET> screen is displayed.


<INITIAL SET>
1. LANGUAGE/CLOCK SET ->
2. CAMERA DETECT ->
3. TITLE SET ->
4. HOLIDAY SET ->
5. TIME PERIOD SET ->
MOVE:JOG SELECT:SHUTTLE
<TIME PERIOD SET>
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

4 Turn the jog dial to select “TIME PERIOD A”, and then turn the shuttle dial clockwise.

“00:” from T1 flashes (indicating the hour).



5 Turn the jog dial to set T1(hours) to “06” (hours), and then turn the shuttle dial clockwise.

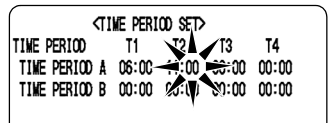
“:00” from T1 flashes (indicating the minutes).

6 Turn the jog dial to set T1 (minutes) to “00” (minutes), and then turn the shuttle dial clockwise.

“00:” from T2 flashes (indicating the hour).

7 Turn the jog dial to set T2 (hours) to “11” (hours), and then turn the shuttle dial clockwise.

“:00” from T2 flashes (indicating the minutes).



8 Turn the jog dial to set T2 (minutes) to “30” (minutes), and then turn the shuttle dial clockwise.

“00:” from T3 flashes (indicating the hour).
Repeat steps 4 through 7 to make hour and minute settings for T3 and T4.

9 In the same manner as described set the hours and minutes of T1, T2, T3, and T4 for “TIME PERIOD B” settings.

<TIME PERIOD SET>

TIME PERIOD	T1	T2	T3	T4
TIME PERIOD A	06:00	11:30	13:30	18:00
TIME PERIOD B	06:00	08:00	14:30	20:00

SELECT TIME PERIOD

SEQUENCE	TIME PERIOD A
MASK	TIME PERIOD A
MOTION SENSOR	TIME PERIOD A

For both TIME PERIOD A and TIME PERIOD B, all settings are “00:00” by default.

CAUTION

- Settings for T1 through T4 cannot be made in such a way that they extend over two days (i.e., include midnight). If “00:00” (midnight) must be set, this should be done using T1.
  Any setting of “00:00” for T2 through T4 will be skipped.
  Example:

T1	T2	T3	T4
06:00	12:00	18:00	00:00

  In the above example, T4 (00:00) is skipped and T3 operates between 18:00 and 06:00.
- Furthermore, when T1 through T4 are all set to “00:00”, all but T1 are ignored, and T1 operates from midnight to midnight.

Time period operations settings

Example 2: Setting time period operation as follows.
Automatic selection and monitor masking for TIME PERIOD A.
Motion sensing for TIME PERIOD B.

<TIME PERIOD SET>

TIME PERIOD	T1	T2	T3	T4
TIME PERIOD A	06:00	11:30	13:30	18:00
TIME PERIOD B	06:00	08:00	14:30	20:00

SELECT TIME PERIOD

SEQUENCE	TIME PERIOD A
MASK	TIME PERIOD A
MOTION SENSOR	TIME PERIOD A

1 Turn the jog dial to move the cursor to “SEQUENCE” within “SELECT TIME PERIOD”, and then turn the shuttle dial clockwise.

“TIME PERIOD A” flashes.

2 Turn the jog dial to select “TIME PERIOD A” or “TIME PERIOD B”, and then turn the shuttle dial clockwise.

The cursor moves to “MASK”.

<TIME PERIOD SET>

TIME PERIOD	T1	T2	T3	T4
TIME PERIOD A	06:00	11:30	13:30	18:00
TIME PERIOD B	06:00	08:00	14:30	20:00

SELECT TIME PERIOD

SEQUENCE	TIME PERIOD A
MASK	TIME PERIOD A
MOTION SENSOR	TIME PERIOD A

3 Set the time period for “MASK” and “MOTION SENSOR” in the same way.

4 Press the [EXIT] button.

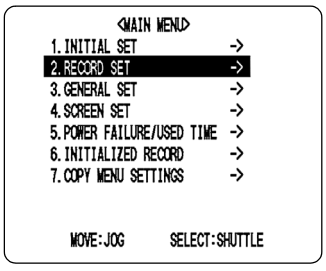
The setting procedure is ended and the display returns to the normal screen.
Automatic selection, masking, and motion sensors are all set to “TIME PERIOD A” by default.

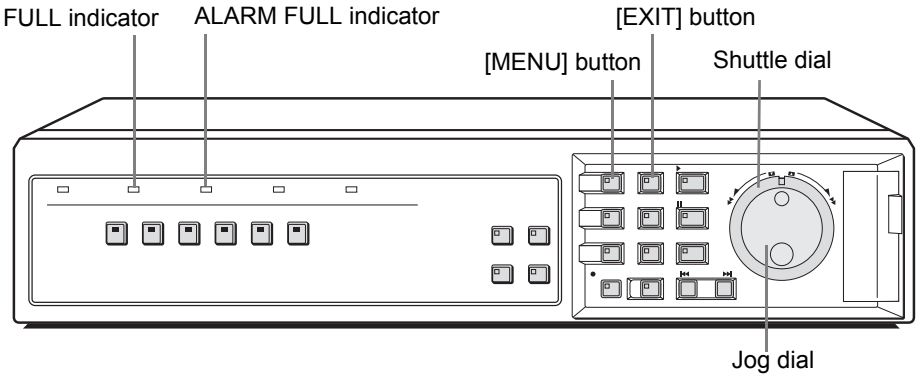
NOTE

- As a result of the above operations, “SEQUENCE” are updated using main monitor and monitor 2 settings on P.90; “MASK” are updated using mask settings from on P.92; and “MOTION SENSOR” are updated using motion sensor settings on P.72.

3 RECORD SET

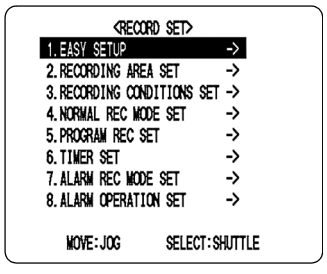
Main Menu

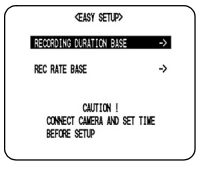
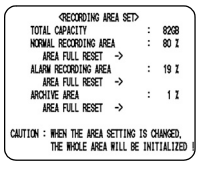
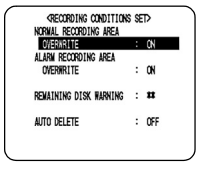
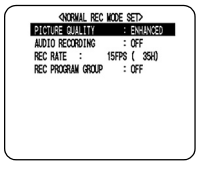
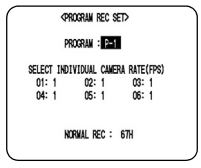
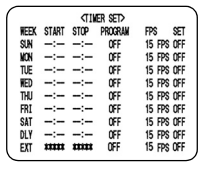

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE



Settings for recording

The <RECORD SET> is used to make the following settings.


<RECORD SET>
1. EASY SETUP ->
2. RECORDING AREA SET ->
3. RECORDING CONDITIONS SET ->
4. NORMAL REC MODE SET ->
5. PROGRAM REC SET ->
6. TIMER SET ->
7. ALARM REC MODE SET ->
8. ALARM OPERATION SET ->
MOVE:JOG SELECT:SHUTTLE

	Setting	Description	Ref.
1		**<EASY SETUP>** Makes basic settings based on a number of days or a rate.	P.53
2		**<RECORDING AREA SET>** Displays the total capacity of the hard disk. Sets the normal recording area, the alarm recording area, and the archive area.	P.57
3		**<RECORDING CONDITIONS SET>** Sets whether overwriting is to be performed (by deleting old video) or recording is to be stopped when any of the hard disk's recording areas become full. Also sets the auto delete.	P.60
4		**<NORMAL REC MODE SET>** Sets the picture quality, audio recording, the recording rate, and the program period.	P.62
5		**<PROGRAM REC SET>** Sets program recording for cameras	P.63
6		**<TIMER SET>** Makes timer settings so that operations can be started at a specified time or on a specified day.	P.65
7		**<ALARM REC MODE SET>** Sets alarm recording, pre-alarm recording, and motion sensors.	P.68
8		**<ALARM OPERATION SET>** Makes settings for operation and display upon detecting an alarm.	P.74

Performing easy setup

Use the following procedures to make simple recording settings. Two different setting methods may be used -- one based on recording days; the other based on recording rate.

CAUTION

- Before making easy setup settings, connect the camera(s) to the digital video recorder and then always perform "CAMERA DETECT". (→P.46)
- When easy setup settings and individual settings are both set, the most recent settings override previous settings.
- Easy setup settings will be cancelled as a result of the following operations.

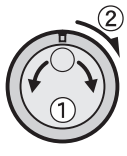
(1) When the number of cameras detected using "CAMERA DETECT" is greater or less than the number of cameras previously stored in the digital video recorder.
(2) When the setting for "PRE-ALARM RECORDING" from the <ALARM REC MODE SET> screen is changed.
(3) When menu settings are loaded from a CompactFlash card.
(4) When a new easy setup setting operation is carried out.
(5) When setting values are changed for normal recording or timer recording.
(6) When the area is changed using the <RECORDING AREA SET> screen.

1 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.

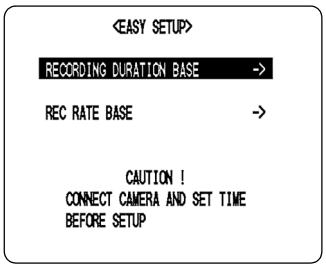
2 Turn the jog dial to select "2. RECORD SET", and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.



3 Turn the jog dial to select "1. EASY SETUP", and then turn the shuttle dial clockwise.

The <EASY SETUP> screen is displayed.

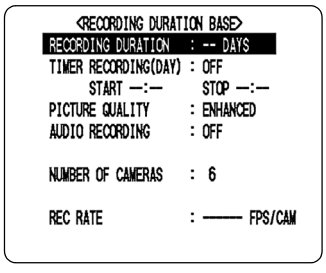


Setting based on recording days

4 Turn the jog dial to select "RECORDING DURATION BASE", and then turn the shuttle dial clockwise.

The <RECORDING DURATION BASE> screen is displayed with the cursor positioned on "RECORDING DURATION".

The number of detected cameras is indicated by "NUMBER OF CAMERAS".

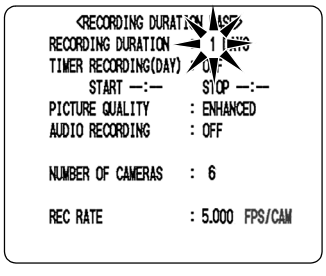


CAUTION

- Confirm that the number of cameras connected to the digital video recorder is the same as the number of displayed recording cameras. If this is not the case, check the wiring between cameras and the digital video recorder and then carry out "CAMERA DETECT". (→P.46)

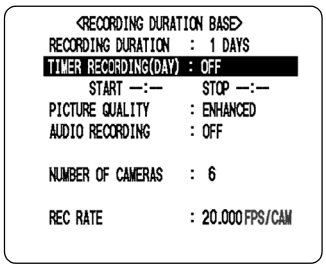
5 Turn the shuttle dial clockwise.

"1" flashes.



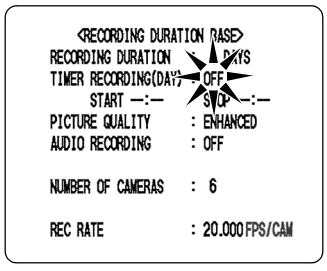
6 Turn the jog dial to select "RECORDING DURATION", and then turn the shuttle dial clockwise.

The cursor moves to "TIMER RECORDING (DAY)".



7 Turn the shuttle dial clockwise.

"OFF" flashes.



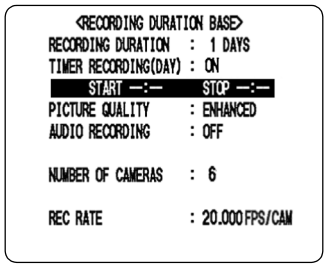
8 To activate timer operation, turn the jog dial to select "ON", and then turn the shuttle dial clockwise.

The cursor moves to "START".

The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values: Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values: Turn the shuttle dial clockwise.

If timer recording has been set to "ON", the timer's "START" and "STOP" should now be set.



9 Set "PICTURE QUALITY".

[Settings] (◆ indicates the default setting)

Setting	Description
BASIC (BA)	15 kB
NORMAL (NO)	22 kB
◆ENHANCED(EN)	30 kB
FINE (FI)	42 kB
SUPER FINE (SF)	50 kB

10 Set "AUDIO RECORDING".

(Example: ON)

[Settings] (◆ indicates the default setting)

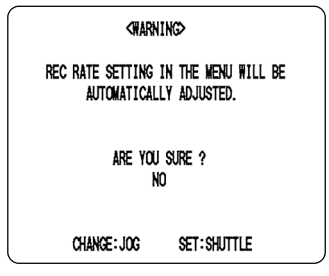
Setting	Description
◆OFF	Audio recording is not carried out.
ON	Audio recording is carried out.

NOTE

- Audio recording can only be specified when the recording rate is 1.00 FPS or greater.
- When set to "ON", the letter "A (indicating that audio will be recorded)" is displayed in front of recording rate. As both video and audio will be stored in the normal recording area, this area's overall capacity will reduce accordingly.

11 Turn the shuttle dial counter-clockwise.

<WARNING> screen is displayed.



12 Turn the jog dial to select "YES", and then turn the shuttle dial clockwise.

The display returns to the <EASY SETUP> screen.

13 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

EXIT

CAUTION

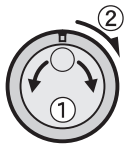
- The recording rate is automatically calculated based on recording settings and the number of connected cameras, and this is indicated by “REC RATE”. All cameras will record at this rate. If a valid figure cannot be calculated, “ERROR!” will be displayed.
- When easy setup settings and individual settings are both set, the most recent settings override previous settings.
- Easy setup settings cannot be used with program recording or day-specific timer recording.

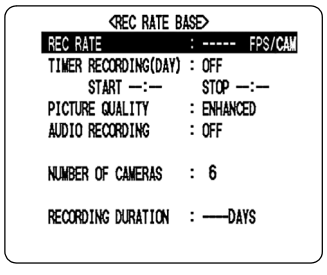
Setting based on recording rate

4 Turn the jog dial to select “REC RATE BASE”, and then turn the shuttle dial clockwise.

The <REC RATE BASE> screen is displayed with the cursor positioned on “REC RATE”.

The number of detected cameras is indicated by “NUMBER OF CAMERAS”.



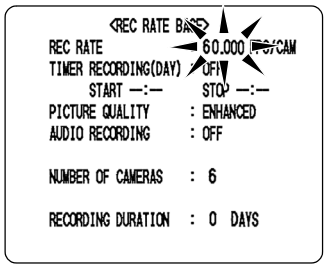

<REC RATE BASE>
REC RATE : ----- FPS/CAM
TIMER RECORDING(DAY) : OFF
START —:— STOP —:—
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
NUMBER OF CAMERAS : 6
RECORDING DURATION : ——DAYS

CAUTION

- Confirm that the number of cameras connected to the digital video recorder is the same as the number of displayed recording cameras. If this is not the case, check the wiring between cameras and the digital video recorder and then carry out “CAMERA DETECT”. (→P.46)

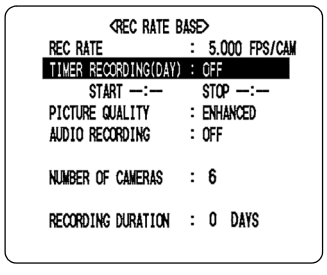
5 Turn the shuttle dial clockwise.

“60.00” flashes.


<REC RATE BASE>
REC RATE : 60.000 FPS/CAM
TIMER RECORDING(DAY) : OFF
START —:— STOP —:—
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
NUMBER OF CAMERAS : 6
RECORDING DURATION : 0 DAYS

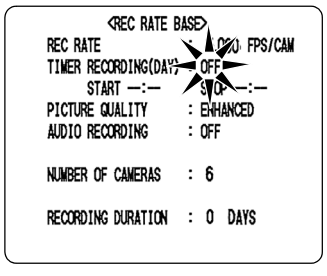
6 Turn the jog dial to select “REC RATE”, and then turn the shuttle dial clockwise.

Set the recording rate for each individual camera.
The cursor moves to “TIMER RECORDING (DAY)”.


<REC RATE BASE>
REC RATE : 5.000 FPS/CAM
TIMER RECORDING(DAY) : OFF
START —:— STOP —:—
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
NUMBER OF CAMERAS : 6
RECORDING DURATION : 0 DAYS

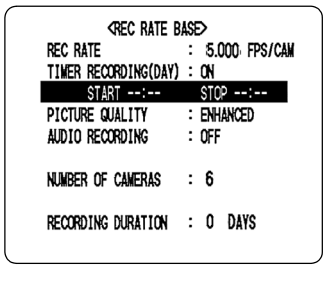
7 Turn the shuttle dial clockwise.

“OFF” flashes.


<REC RATE BASE>
REC RATE : 5.000 FPS/CAM
TIMER RECORDING(DAY) : OFF
START —:— STOP —:—
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
NUMBER OF CAMERAS : 6
RECORDING DURATION : 0 DAYS

8 To activate timer operation, turn the jog dial to select “ON”, and then turn the shuttle dial clockwise.

The cursor moves to “START”.
If timer recording has been set to “ON”, the timer’s “START” and “STOP” should now be set.


<REC RATE BASE>
REC RATE : 5.000 FPS/CAM
TIMER RECORDING(DAY) : ON
START --:-- STOP --:--
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
NUMBER OF CAMERAS : 6
RECORDING DURATION : 0 DAYS

The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values: Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values: Turn the shuttle dial clockwise.

9 Set “PICTURE QUALITY”.

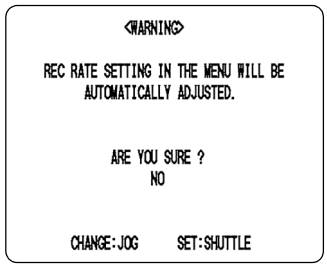
See P.55

10 Set “AUDIO RECORDING”.

See P.55

11 Turn the shuttle dial counter-clockwise.

<WARNING> screen is displayed.



12 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

The display returns to the <EASY SETUP> screen.

13 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

CAUTION

- The recording rate is automatically calculated based on recording settings and the number of connected cameras, and this is indicated by “RECORDING DURATION”. If a valid figure cannot be calculated, “ERROR!” will be displayed.
- When simple recording settings and individual settings are both set, the most recent settings override previous settings.
- Easy setup settings cannot be used with program recording or day-specific timer recording.

Displaying the recording areas

Use the following procedures to confirm the hard disk’s total recording capacity and also the allocation for each recording area.

1 Press the [MENU] button.

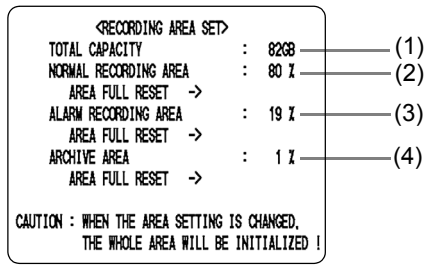
The MENU indicator lights up and the <MAIN MENU> is displayed.

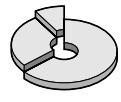
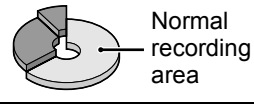
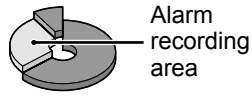
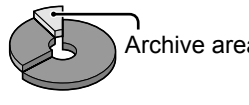
2 Turn the jog dial to select “2.RECORD SET”, and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.

3 Turn the jog dial to select “2. RECORDING AREA SET”, and then turn the shuttle dial clockwise.

The <RECORDING AREA SET> screen is displayed.


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED, THE WHOLE AREA WILL BE INITIALIZED !
(1)
(2)
(3)
(4)

(1)	Displays the total capacity of the hard disk.	
(2)	Sets the capacity of the normal recording area.	 Normal recording area
(3)	Sets the capacity of the alarm recording area.	 Alarm recording area
(4)	Sets the capacity of the archive area.	 Archive area

NOTE

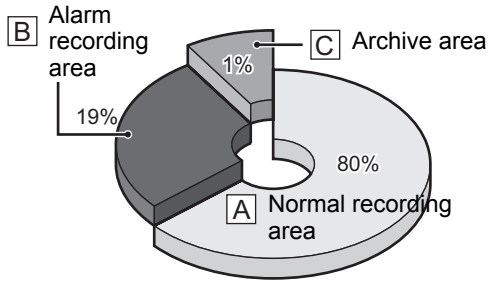
Total capacity following hard disk expansion.

When “MIRRORING” (→P.82) is set using “4. HDD SET”, the total capacity display will change as follows.

- If “MIRRORING” is “OFF”, the capacity for hard-disk expansion is displayed.
- If “MIRRORING” is “ON”, the capacity of the smallest hard-disk is displayed.
- The setting for the archive area cannot be modified directly.
  When changes are made for the normal recording area or the alarm recording area, automatic settings will be made within a maximum range of 10 GB.

■ Default hard disk settings

By default, the normal recording area is set to 80%; the alarm recording area is set to 19%; and the archive area is set to 1%. The maximum capacity of the archive area is 10 GB.



Hard Disk Recording Areas

CAUTION

- When the recording area settings are changed, the disk is initialized and all current recordings are erased. It is important, therefore, to store recorded video on a PC or some other storage media before modifying recording areas.

Changing recording areas

■ Recording area allocations

The highest possible allocation for the normal recording area and the alarm recording area is 99%.
The allocation for the archive area cannot be set manually.This allocation will be automatically set to at least 1%.

■ If the normal recording area is set to 0%

If set to 0%, it will not be possible to record video to the normal recording area. As video will only be recorded to the alarm recording area in this type of case, the area allocations should be reviewed and set accordingly.

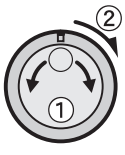
CAUTION

- If the normal recording area is set to “0%”, the [PLAY/STOP] button will be deactivated. In such a case, search playback should be carried out.
- A maximum of 16,000 alarm recordings can be made on one hard disk. If hard disk expansion is carried out, this number can be increased to 32,000. Note, however, that menu settings and display content will have an effect on the maximum number of recordings that can be made in reality.
- **When the normal recording area is set to “*0%”**
  Alarm recording can be performed for as long as space is left in the alarm recording area.
  When searching for video, this area can be searched in the same way as the normal recording area using time/date searches, fast-forward play, and fast-reverse play. Alarm search, alarm thumbnail search, motion detection search, and alarm skip will not be available.

Example:
Setting the normal recording area to 50% and the alarm recording area to 49%

1 Turn the jog dial to select the “NORMAL RECORDING AREA”, and then turn the shuttle dial clockwise.

“80%” flashes.




```
<RECORDING AREA SET>
TOTAL CAPACITY                  :  82GB
NORMAL RECORDING AREA           :  80 %
   AREA FULL RESET  ->
ALARM RECORDING AREA            :  19 %
   AREA FULL RESET  ->
ARCHIVE AREA                    :   1 %
   AREA FULL RESET  ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```

2 Turn the jog dial to set “NORMAL RECORDING AREA” to 50%, and then turn the shuttle dial clockwise.

The cursor moves to “ALARM RECORDING AREA”.

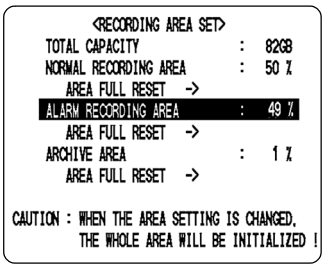
```
<RECORDING AREA SET>
TOTAL CAPACITY                  :  82GB
NORMAL RECORDING AREA           :  50 %
   AREA FULL RESET  ->
ALARM RECORDING AREA            :  38 %
   AREA FULL RESET  ->
ARCHIVE AREA                    :  12 %
   AREA FULL RESET  ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```

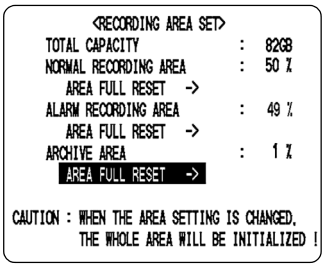
The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values: Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values: Turn the shuttle dial clockwise.

3 Set “ALARM RECORDING AREA” to 49%.


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 50 %
AREA FULL RESET ->
ALARM RECORDING AREA : 49 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

4 Move the cursor to “AREA FULL RESET”.


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 50 %
AREA FULL RESET ->
ALARM RECORDING AREA : 49 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

5 Turn the shuttle dial clockwise.

<WARNING> screen is displayed. The screen contains a message regarding initialization of the hard disk.

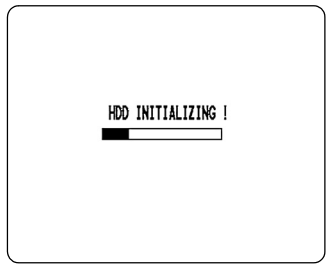
6 To change the recording area, turn the jog dial to display “YES”.

CAUTION

- If the shuttle dial is turned clockwise while “NO” is selected, the <RECORDING AREA SET> screen will be displayed and the recording capacities will revert to their previous settings. In other words, the new settings will not be adopted.

7 Turn the shuttle dial clockwise.

(1) The hard disk is initialized.



(2) The <RECORDING AREA SET> screen appears and the modified recording capacities are adopted.

8 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Setting overwrite permission

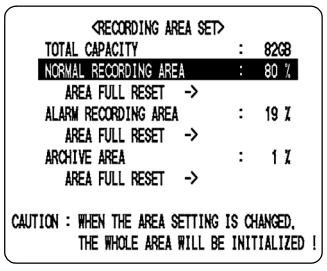
By default, when all of the space in the hard disk’s normal recording area and alarm recording area has been used up, repetitive overwriting is automatically started (resulting in the older data being replaced).
However, it may be desirable to prevent overwriting in such a case when recorded video is to be checked. To do this, follow the procedure described below to allow only a single overwrite for each recording area.

1 Set the items in “Setting normal recording area overwriting and displaying the remaining capacity on the operation display area”. (→P.60)

The remaining hard disk capacity is displayed, and simultaneously either the FULL indicator or the ALARM FULL indicator will begin to flash.

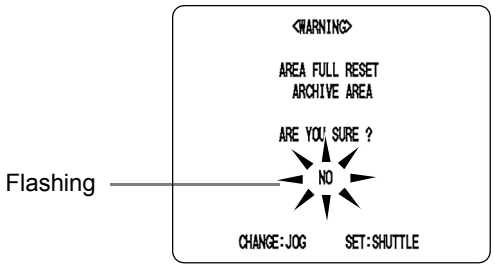
2 Turn the jog dial to select “2. RECORDING AREA SET” from the <RECORD SET> screen, and then turn the shuttle dial clockwise.

The <RECORDING AREA SET> screen is displayed.


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

3 Turn the jog dial to select “AREA FULL RESET”, and then turn the shuttle dial clockwise.

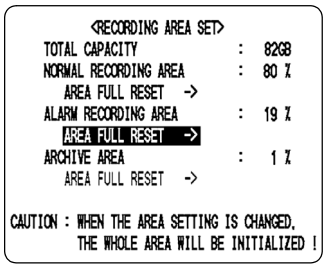
“NO” on the <WARNING> screen flashes.



4 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

“NORMAL RECORDING AREA” is set to the single overwrite condition.

5 Use the same procedure to make settings for the “ALARM RECORDING AREA”.


<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

6 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

NOTE

- To perform overwriting automatically, set “OVERWRITE” for either “NORMAL RECORDING AREA” or “ALARM RECORDING AREA” from <RECORDING CONDITIONS SET> screen to “ON”. (→P.60)

CAUTION

- Whenever “AREA FULL RESET” is performed for “NORMAL RECORDING AREA” or “ALARM RECORDING AREA”, the video recorded in the corresponding area will be overwritten.
- Images in the archive area are erased when “AREA FULL RESET” is performed for the archive area.

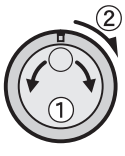
Setting recording conditions

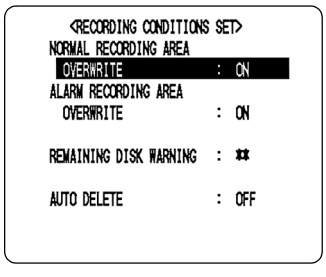
Use the following setting procedure to indicate whether overwriting is to be performed (deleting old video) or recording is to be stopped when any of the hard disk’s recording areas become full. In the latter case, the remaining capacity is shown as a percentage on the operation display area.

Setting normal recording area overwriting and displaying the remaining capacity on the operation display area

1 Turn the jog dial to select “OVERWRITE” for normal recording area, and then turn the shuttle dial clockwise.

“ON” flashes.



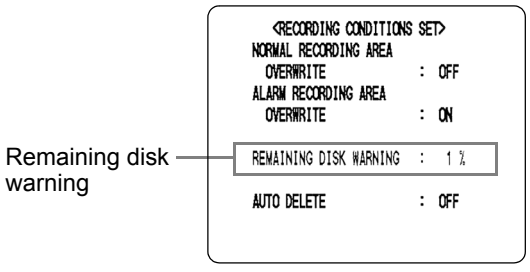


2 Turn the jog dial to select setting (OFF, for example), and then turn the shuttle dial clockwise.

“REMAINING DISK WARNING” changes to “1%” from “**”.

[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	Recording is stopped when the normal recording area becomes full.
ON	Overwriting automatically starts from the beginning of the normal recording area when it becomes full.



NOTE

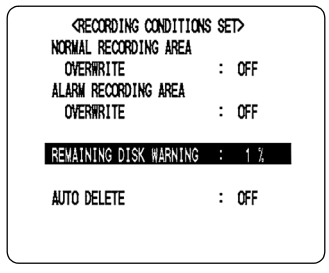
- If this is set to “OFF”, the FULL indicator or ALARM FULL indicator will start to flash when the remaining hard-disk capacity reaches the percentage set for “REMAINING DISK WARNING”.

3 Use the same procedure to set “ALARM RECORDING AREA” to “OFF”.

4 Turn the jog dial to select “REMAINING DISK WARNING”, and then turn the shuttle dial clockwise.

5 Turn the jog dial to set a “REMAINING DISK WARNING”, and then turn the shuttle dial clockwise.

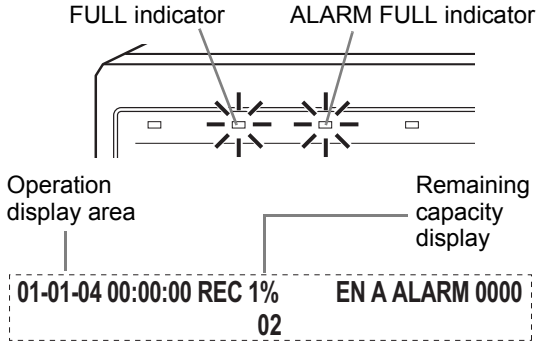
The remaining capacity can be set anywhere between 1% (default) and 10%.



6 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

A warning will be displayed in the operation display area when the remaining capacity for any recording area reaches the specified percentage value. In addition, the FULL indicator (for the normal recording area) or the ALARM FULL indicator (for the alarm recording area) will flash at this time.

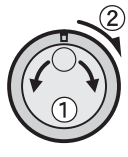


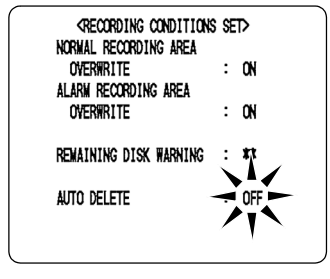
Setting auto deleting

You can set a storage period for recorded data as described below. When the set period has expired, the corresponding data will be automatically deleted.

1 Turn the jog dial to select “AUTO DELETE”, and then turn the shuttle dial clockwise.

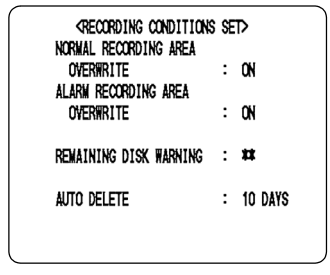
“OFF” flashes.





2 Turn the jog dial to select the storage period.

You can set the storage period for recorded data “OFF“ or within a range of “1 DAY” - “99 DAYS” (full days).



3 Turn the shuttle dial clockwise.

4 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

EXIT

When the normal recording area or the alarm recording area become full

Make a new “AREA FULL RESET” setting for “NORMAL RECORDING AREA” and “ALARM RECORDING AREA” on the <RECORDING AREA SET> screen.(→P.59)

<RECORDING AREA SET>
TOTAL CAPACITY : 82GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET →
ALARM RECORDING AREA : 19 %
AREA FULL RESET →
ARCHIVE AREA : 1 %
AREA FULL RESET →

CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

Setting normal recording

Use the following procedure to make normal recording settings for recording quality, audio recording, and recording rate. Alternatively, a program number set using “PROGRAM REC SET” can be specified to set these parameters.

1 Press the [MENU] button.

The MENU indicator lights up and the <MAIN MENU> is displayed.

MENU

2 Turn the jog dial to select “2. RECORD SET”, and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.

3 Turn the jog dial to select “4. NORMAL REC MODE SET”, and then turn the shuttle dial clockwise.

The <NORMAL REC MODE SET> screen is displayed.

<NORMAL REC MODE SET>
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
REC RATE : 15FPS (35H)
REC PROGRAM GROUP : OFF

4 Turn the shuttle dial clockwise.

“ENHANCED” flashes (indicating enhanced quality recording).

5 Turn the jog dial to select “PICTURE QUALITY”, and then turn the shuttle dial clockwise.

<NORMAL REC MODE SET>
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
REC RATE : 15FPS (35H)
REC PROGRAM GROUP : OFF

[Settings] (◆ indicates the default setting)

Setting	Description
BASIC (BA)	15 kB
NORMAL (NO)	22 kB
◆ENHANCED(EN)	30 kB
FINE (FI)	42 kB
SUPER FINE (SF)	50 kB

CAUTION

- The file size is intended as a general guideline and actual sizes will depend on the recorded video.

The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values : Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values : Turn the shuttle dial clockwise.

6 Set “AUDIO RECORDING”.

(Default setting: OFF)
(Example: ON)

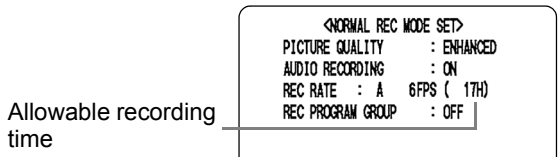
<NORMAL REC MODE SET>
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
REC RATE : A 15FPS (34H)
REC PROGRAM GROUP : OFF

NOTE

- Audio recording can only be specified when “REC RATE” is between A 60.00 and A 1.00 FPS.
- When set to “ON”, the letter “A (indicating that audio will be recorded)” is displayed in front of the recording rate. As both video and audio will be stored in the normal recording area, this area’s overall capacity will reduce accordingly.
- Audio will only be output during playback at the same rate as recording.
- Audio and video may be slightly out of synchrony in certain situations.

7 Set “REC RATE”.

(Default setting: 15.00 FPS)
(Example: 6.00)
Allowable recording time is dependent on the setting made for “PICTURE QUALITY”. For more details, see the “Table of recording rate and times” (→P.103).

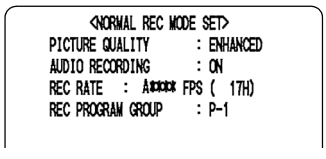


CAUTION

- When pre-alarm recording is set to “ON”, the recording rate is limited to 30.00 FPS (and a setting of 60.00 FPS cannot be made).

8 Set “REC PROGRAM GROUP”.

See (→P.63) for more details regarding program recording.
(Example: P-1)



[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	Video from all cameras is recording at the same rate.
P-1	Used when recording with Program No. 1.
P-2	Used when recording with Program No. 2.
P-3	Used when recording with Program No. 3.
P-4	Used when recording with Program No. 4.

9 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

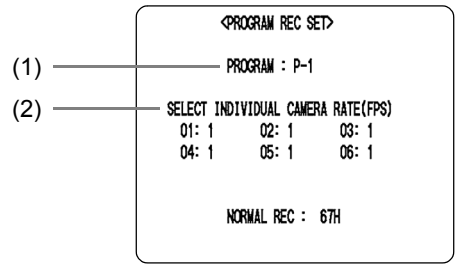
Setting program recording

Use the following procedure to record from specified cameras. A total of four programs (No. 1 through No. 4) can be setup for this purpose. For example, Program No. 1 could be setup to record from cameras No. 1 through No. 4 only, whereas Program No. 2 could be setup to record from cameras No. 3 through No. 6. In addition, these programs can also be used for timer recording.

CAUTION

- Even if audio recording is set to “ON” using the <NORMAL REC MODE SET> screen, certain settings for program recording may make it impossible for audio to be recorded. When audio is to be recorded, you are recommended to do a trial recording first of all to confirm that this is possible.

Example:
Setting Program No. 1 to record video from cameras No. 1 through No. 3

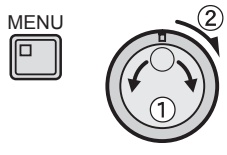


(1) PROGRAM
Selects Program No. 1 through Program No. 4.

(2) SELECT INDIVIDUAL CAMERA RATE
Sets which of the connected cameras (1 through 6) to record from. Recording rates can also be set for each camera.

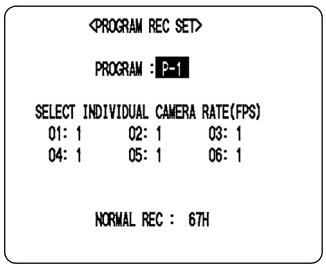
1 Press the [MENU] button, turn the jog dial to select “2. RECORD SET”, and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.



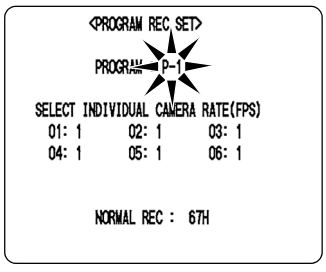
2 Turn the jog dial to select “5. PROGRAM REC SET”, and then turn the shuttle dial clockwise.

The <PROGRAM REC SET> screen is displayed with the cursor positioned on “PROGRAM”.



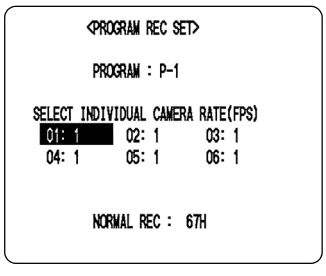
3 Turn the shuttle dial clockwise.

“P-1” flashes.



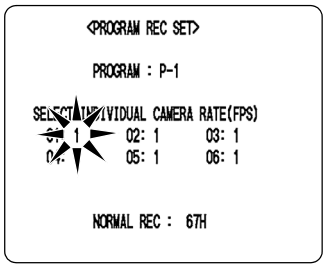
4 Turn the jog dial to select a program number (P-1, for example), and then turn the shuttle dial clockwise.

The cursor moves to “01” from “SERECT INDIVIDUAL CAMERA RATE (FPS)”.



5 Turn the shuttle dial clockwise.

“1” (recording rate) flashes.



6 Turn the jog dial to select a recording rate (3.75, for example), and then turn the shuttle dial clockwise.

Camera No. 1 is now set to record at a rate of 3.75. The cursor moves to “02”.

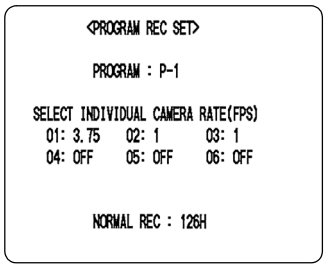
Valid recording rates
30*, 15, 7.5, 3.75, 1.875, 1.0, 0.500, 0.330, 0.250, 0.200, 0.100, 0.050, 0.033 (Unit: FPS)
* A selection cannot be made when pre-alarm recording has been set to “ON”.

7 Set recording rates for Camera No. 2 and Camera No. 3 in the same way.

8 With the cursor flashing on “04” (camera number), turn the jog dial to select “OFF”, and then turn the shuttle dial clockwise.

Video from Camera No. 4 will not be recorded.

9 Use the same procedure to set Camera No. 5 and Camera No. 6 to “OFF”.



10 If necessary, use this procedure to setup other programs (i.e., No. 2 through No. 4).

11 Press the [EXIT] button.

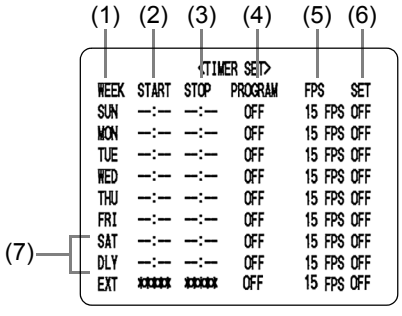
The setting procedure is ended and the display returns to the normal screen.

Timer settings

Use the following procedures to set recording start and stop times using the timer function.

Timer setting items

Timer setting items allow you to set times at which to start and stop recording or recording rate on each specified day of the week.


(1) (2) (3) (4) (5) (6)
<TIMER SET>
WEEK START STOP PROGRAM FPS SET
SUN —:— —:— OFF 15 FPS OFF
MON —:— —:— OFF 15 FPS OFF
TUE —:— —:— OFF 15 FPS OFF
WED —:— —:— OFF 15 FPS OFF
THU —:— —:— OFF 15 FPS OFF
FRI —:— —:— OFF 15 FPS OFF
SAT —:— —:— OFF 15 FPS OFF
DLY —:— —:— OFF 15 FPS OFF
EXT ***** ***** OFF 15 FPS OFF
(7)

(1) WEEK
These fields are used to select the days of the week for timer settings. When a day in the “WEEK” column is flashing, it can be set to another day.The 7th line (default: “SAT”) and 8th line (default: “DLY”) are used for timer recording settings of over 24 hours.

(2) START
These fields are used to enter the 24-hour time at which to start timer recording.

(3) STOP
These fields are used to enter the 24-hour time at which to stop timer recording.
If the start and end times are on different days (i.e., midnight is included), a “T” will be displayed to the left of the end time.

(4) PROGRAM
These fields are used to enable timer recording using the program function “P-1” through “P-4”.(→P.63)

(5) FPS
These fields are used to set the recording rate.
No setting is necessary here when using program recording.

(6) SET
When set to “ON”, timer recording is enabled.
When set to “OFF”, timer recording is disabled.

(7) Settings for timer recording of over 24 hours
Use these lines for timer recording spanning more than 24 hours.

NOTE

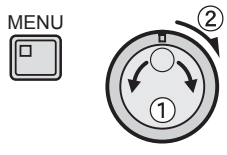
- The settings made using <NORMAL REC MODE SET> are used to set quality and audio recording for timer recording. (→P.62)
- Ensure that start and end times are input using 24-hour notation.
- If the start and end times are on different days (i.e., midnight is included), a “T” will be displayed to the left of the end time.

Making timer reservations every day with the same duration and recording rate

Example:
Making a timer recording every day from 8:30 to 18:30 with the same recording rate.

1 Press the [MENU] button and turn the jog dial to select “2. RECORD SET”, and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.



2 Turn the jog dial to select “6. TIMER SET”, and then turn the shuttle dial clockwise.

The <TIMER SET> screen is displayed.

The cursor moves to the “SUN” row.

<TIMER SET>

WEEK	START	STOP	PROGRAM	FPS	SET
SUN	--:--	--:--	OFF	15 FPS	OFF
MON	—:—	—:—	OFF	15 FPS	OFF
TUE	—:—	—:—	OFF	15 FPS	OFF
WED	—:—	—:—	OFF	15 FPS	OFF
THU	—:—	—:—	OFF	15 FPS	OFF
FRI	—:—	—:—	OFF	15 FPS	OFF
SAT	—:—	—:—	OFF	15 FPS	OFF
DLY	—:—	—:—	OFF	15 FPS	OFF
EXT	*****	*****	OFF	15 FPS	OFF

3 Turn the shuttle dial clockwise.

“SUN” from the “WEEK” column flashes.

4 Turn the jog dial to set “SUN” to “DLY”, and then turn the shuttle dial clockwise.

The start time flashes as “--:--”.

5 Repeat steps 3 and 4 to set the remaining items using the shuttle dial and jog dial.

■ To change a displayed setting item

Turn the shuttle dial in the required direction to select the item to be changed, and then turn the jog dial to change the setting.

<TIMER SET>

WEEK	START	STOP	PROGRAM	FPS	SET
SUN	08:30	18:30	OFF	15 FPS	ON
MON	--:--	--:--	OFF	15 FPS	OFF
TUE	—:—	—:—	OFF	15 FPS	OFF
WED	—:—	—:—	OFF	15 FPS	OFF
THU	—:—	—:—	OFF	15 FPS	OFF
FRI	—:—	—:—	OFF	15 FPS	OFF
SAT	—:—	—:—	OFF	15 FPS	OFF
DLY	—:—	—:—	OFF	15 FPS	OFF
EXT	*****	*****	OFF	15 FPS	OFF

■ Picture quality and recording rate for timer recording

- Picture quality is set using “PICTURE QUALITY” from the “4. NORMAL REC MODE SET”. (→P.62)
- When program recording is set to “OFF”, the “REC RATE” from the 4. NORMAL REC MODE SET sub-menu is used. (P.62)

6 Press the [EXIT] button when all of the necessary settings have been made.

The display returns to the normal screen.

■ To set different recording times and/or recording rates for each day of the week

Set the desired recording times and recording rate for each day.

NOTE

- If specific days are set as holidays, the operation for Sunday will be used on those days also. (→P.48)

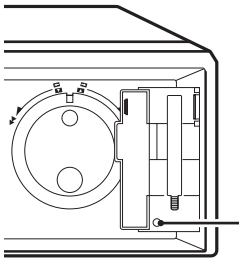
CAUTION

- If timer settings overlap, recording is performed in the following sequence.
  Each daily reservation → DLY → EXT
  Priority (high) ←——————→ (low)
- If a reservation for a particular day overlaps with a daily reservation, priority is given to that with the earliest start time. If both have the same start time, priority is given to that with the highest setting position in the menu.

To cancel all set timer reservations

1 Press the [MENU RESET] button with the <TIMER SET> screen displayed.

All setting items are cleared.



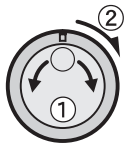
Timer reservations spanning more than 24 hours

Use the following procedures to set timer recordings spanning more than 24 hours. The 7th (SAT) and 8th (DLY) lines from the <TIMER SET> screen are used for this purpose.

Example:
Timer recording from 10:30 on Monday to 20:30 on Wednesday with a recording rate of 5 FPS.

1 Turn the jog dial to select line 7 (SAT), and then turn the shuttle dial clockwise.

“SAT” from the “WEEK” column flashes.
You can change the setting of the flashing item.



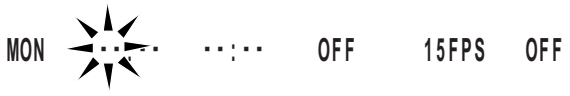
<TIMER SET>

WEEK	START	STOP	PROGRAM	FPS	SET
SUN	—:—	—:—	OFF	15 FPS	OFF
MON	—:—	—:—	OFF	15 FPS	OFF
TUE	—:—	—:—	OFF	15 FPS	OFF
WED	—:—	—:—	OFF	15 FPS	OFF
THU	—:—	—:—	OFF	15 FPS	OFF
FRI	—:—	—:—	OFF	15 FPS	OFF
SAT	—:—	—:—	OFF	15 FPS	OFF
DLY	—:—	—:—	OFF	15 FPS	OFF
EXT	*****	*****	OFF	15 FPS	OFF

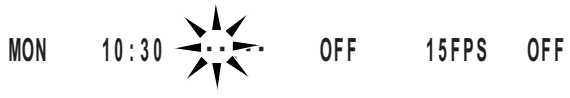
Line 7

2 Make settings in the “WEEK” and “START” columns.

(1) Turn the jog dial to change “SAT” to “MON”, and then turn the shuttle dial clockwise.
“--” (time) under “START” flashes.

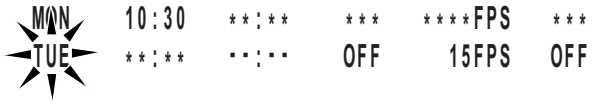


(2) Turn the jog dial to change “--” to “10”, and then turn the shuttle dial clockwise.
(3) Turn the jog dial to change “--” to “30”, and then turn the shuttle dial clockwise.



3 Turn the jog dial to change the stop time from “--” to “**”, and then turn the shuttle dial clockwise.

The “DLY” item on line 8 automatically changes to “TUE” (i.e., the day after that set on line 7) and flashes. Items that do not need to be set are displayed as ＊.



4 Set the day and time to stop recording using “WEEK” and “STOP”, and also make settings for “FPS” and “SET”.

(1) Turn the jog dial to change “TUE” to “WED”, and then turn the shuttle dial clockwise.
(2) Turn the jog dial to change “--” to “20”, and then turn the shuttle dial clockwise.
(3) Turn the jog dial to change “--” to “30”, and then turn the shuttle dial clockwise.
(4) Turn the jog dial to change “--” (recording rate) to “5”, and then turn the shuttle dial clockwise.
(5) Turn the jog dial to set “OFF” to “ON”.

5 Press the [EXIT] button.

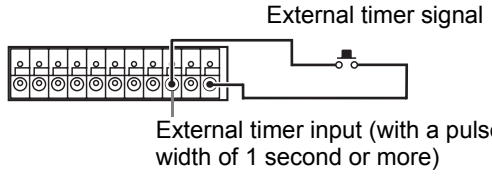
The setting procedure is ended and the display returns to the normal screen.

Timer recording using an external timer

Use the following procedure to control the start and end of recording in response to signals received via the EXT TIMER ON terminal on the rear of the digital video recorder.

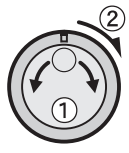
Example:
Recording at a rate of 5 FPS using the EXT TIMER ON terminal

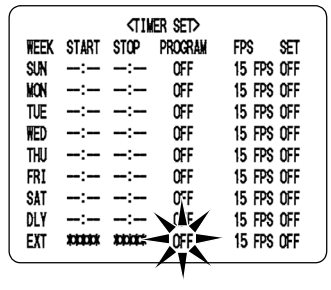
1 Connect the signal line from the external timer to the EXT TIMER ON terminal within the rear panel control terminal block.



2 Turn the jog dial to select line 9 (EXT), and then turn the shuttle dial clockwise.

“OFF” for “PROGRAM” flashes.




<TIMER SET>
WEEK START STOP PROGRAM FPS SET
SUN --:-- --:-- OFF 15 FPS OFF
MON --:-- --:-- OFF 15 FPS OFF
TUE --:-- --:-- OFF 15 FPS OFF
WED --:-- --:-- OFF 15 FPS OFF
THU --:-- --:-- OFF 15 FPS OFF
FRI --:-- --:-- OFF 15 FPS OFF
SAT --:-- --:-- OFF 15 FPS OFF
DLY --:-- --:-- OFF 15 FPS OFF
EXT ***** ***** OFF 15 FPS OFF

3 Turn the jog dial to set “PROGRAM” to “OFF”, and then turn the shuttle dial clockwise.

“15” for “FPS” flashes.

4 Turn the jog dial to set “FPS” to “5”, and then turn the shuttle dial clockwise.

“OFF” flashes.

5 Turn the jog dial to change “OFF” to “ON”, and then turn the shuttle dial clockwise.

The cursor moves to line 1.

EXT ***** ***** OFF 5FPS ON

6 Press the [EXIT] button.

The setting is completed and turns to normal screen.

EXIT

7 Press the [TIMER] button.

TIMER

- The [TIMER] button lights up and the recorder enters timer recording standby mode.
- “REC” will be displayed within the operation display area while a signal is being received (with a pulse width of 1 second or more) via the EXT TIMER ON terminal, and monitoring video will be recorded in the normal recording area.

CAUTION

- External timer recording and normal timer recording can be combined.
- Connect the signal line from the external timer to the external timer recording terminal. External timer recording will not be possible until a timer is connected.

Setting alarm recording

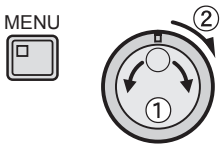
To set alarm recording

Use the following procedure to select the recording picture quality, audio recording, and recording rate for the alarm recording area.

1 Press the [MENU] button and turn the jog dial to select “2. RECORD SET”, and then turn the shuttle dial clockwise.

The <RECORD SET> screen is displayed.

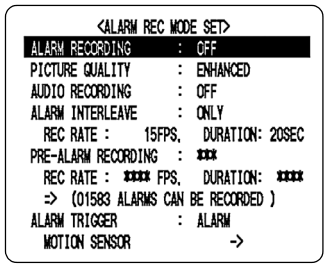
MENU



2 Turn the jog dial to select “7. ALARM REC MODE SET”, and then turn the shuttle dial clockwise.

The <ALARM REC MODE SET> screen is displayed.

The cursor moves to “ALARM RECORDING”.


<ALARM REC MODE SET>
ALARM RECORDING : OFF
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM INTERLEAVE : ONLY
REC RATE : 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ***
REC RATE : **** FPS, DURATION: ****
=> (01583 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
<ALARM REC MODE SET>
ALARM RECORDING : OFF
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM INTERLEAVE : ONLY
REC RATE : 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ***
REC RATE : **** FPS, DURATION: ****
=> (01500

5 Set “PICTURE QUALITY”.

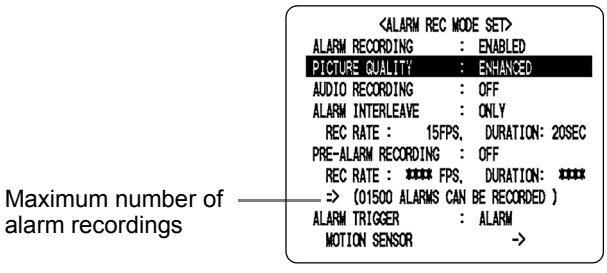
[Settings] (◆ indicates the default setting)

Setting	Description
BASIC (BA)	15 kB
NORMAL (NO)	22 kB
◆ENHANCED(EN)	30 kB
FINE (FI)	42 kB
SUPER FINE (SF)	50 kB

CAUTION

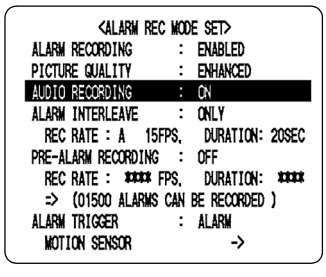
- The file size is intended as a general guideline and actual sizes will depend on the recorded video.

The maximum number of alarm recordings as determined by the alarm settings is displayed in parentheses.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM INTERLEAVE : ONLY
REC RATE : 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : OFF
REC RATE : **** FPS, DURATION: ****
=> (01500 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
Maximum number of alarm recordings

6 Set “AUDIO RECORDING”.

When set to “ON”, the letter “A (indicating that audio will be recorded)” is displayed in front of recording rate, and the maximum number of alarm recordings is displayed in parenthesis.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : OFF
REC RATE : **** FPS, DURATION: ****
=> (01500 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
(01500 ALARMS CAN BE RECORDED)

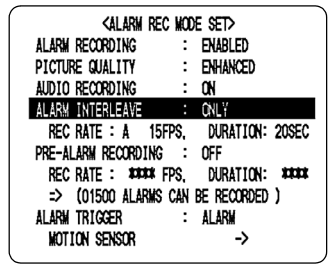
[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	Audio recording is not carried out.
ON	Audio recording is carried out.

[Setting conditions]

- Audio recording is possible when “REC RATE” is set to 1.00 FPS or greater.

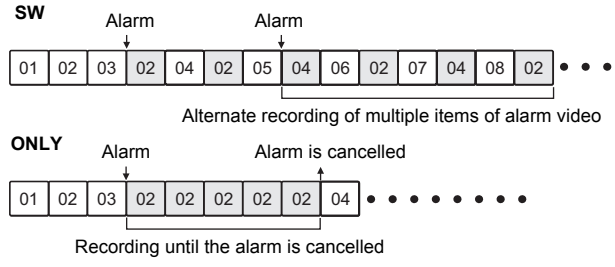
7 SET “ALARM INTERLEAVE”


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : OFF
REC RATE : **** FPS, DURATION: ****
=> (01500 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
(01500 ALARMS CAN BE RECORDED)

[Settings] (◆ indicates the default setting)

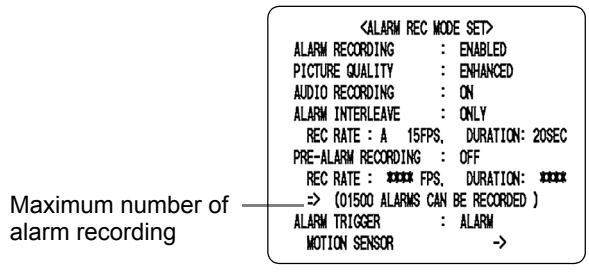
Setting	Description
SW	Recording is switched between camera video including an alarm and video from all connected cameras.
◆ONLY	Video is recorded only from cameras with an alarm occurring.

* Recording pattern for “SW” and “ONLY”


SW
Alarm
Alarm
01 02 03 02 04 02 05 04 06 02 07 04 08 02
Alternate recording of multiple items of alarm video
ONLY
Alarm
Alarm is cancelled
01 02 03 02 02 02 02 02 04
Recording until the alarm is cancelled

8 Set “REC RATE” and “DURATION”

The maximum number of recording alarms (shown in parentheses) changes in accordance with the new settings.
(Default setting for recording rate: 15.00 FPS)
(Default setting for duration: 20 SEC)


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : OFF
REC RATE : **** FPS, DURATION: ****
=> (01500 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
Maximum number of alarm recording

[Settings]

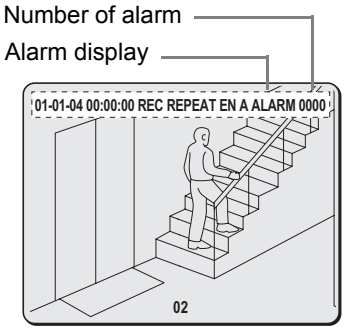
	Setting	Description
REC RATE	30.00 to 0.03 FPS	Sets the recording rate.
DURATION	5 SEC, 10 SEC, 20 SEC, 40 SEC, 1 MIN, 2 MIN, 3 MIN, 4 MIN, 5 MIN, 10 MIN, 15 MIN, CC*	Sets the recording time per alarm.

* Operates while an alarm is being triggered. (5 sec. minimum)

When alarm recording settings have been completed

Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.
"ALARM" appears in the operation display area.
When an alarm occurs, the number of alarms is displayed.



CAUTION

- If a new alarm occurs during alarm recording, the alarm count is incremented in the same way as if two alarms had occurred. However, in cases where alarms occur consecutively on the same channel, alarm retrigger settings (→P.74) can be used to ensure that these are counted as one alarm only.

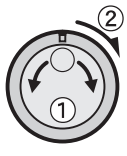
To set pre-alarm recording

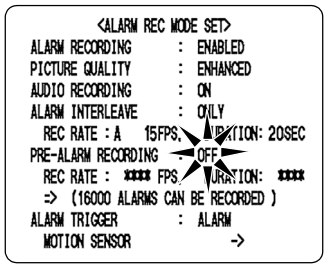
CAUTION

- Settings cannot be made for "PRE-ALARM RECORDING" when "ALARM RECORDING" is set to "OFF"

1 Turn the jog dial to select "PRE-ALARM RECORDING", and then turn the shuttle dial clockwise.

"OFF" flashes.




<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : OFF
REC RATE : **** FPS, DURATION: ****
=> (16000 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
OFF

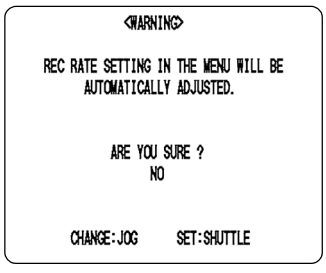
2 Turn the jog dial to change "OFF" to "ON", and then turn the shuttle dial clockwise.

A message appears indicating automatic rate adjustment.
"NO" flashes.

[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	Pre-alarm recording is not carried out.
ON	Pre-alarm recording is carried out.

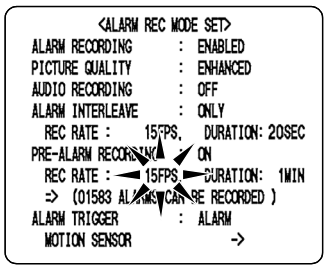
3 Turn the jog dial to select "YES" for warning message, and then turn the shuttle dial clockwise.



The cursor moves to recording rate and duration.

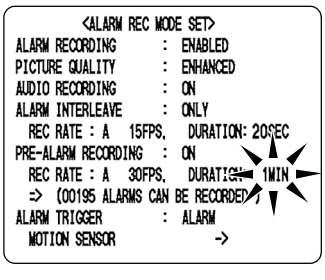
4 Turn the shuttle dial clockwise.

"REC RATE" for "PRE-ALARM RECORDING" flashes.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM INTERLEAVE : ONLY
REC RATE : 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : 15FPS, DURATION: 1MIN
=> (01583 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
15FPS

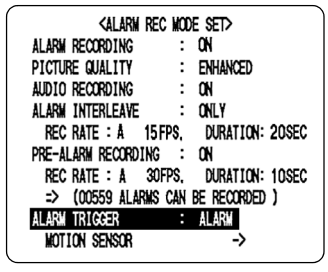
5 Turn the jog dial to set "REC RATE" (30 FPS, for example), and then turn the shuttle dial clockwise.

(Default setting: 15.00 FPS)
"DURATION" for "PRE-ALARM RECORDING" flashes.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : A 30FPS, DURATION: 1MIN
=> (00195 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->
1MIN

6 Turn the jog dial to set “DURATION” (10 SEC for example), and then turn the shuttle dial clockwise.

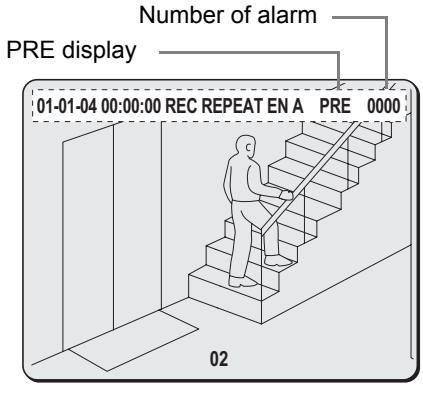
(Default setting: 1 MIN)
The cursor moves to “ALARM TRIGGER”.


<ALARM REC MODE SET>
ALARM RECORDING : ON
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : A 30FPS, DURATION: 10SEC
=> (00559 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR ->

When pre-alarm recording settings have been completed

Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.
“PRE” appears in the operation display area. When an alarm occurs, “ALARM” is displayed.



CAUTION

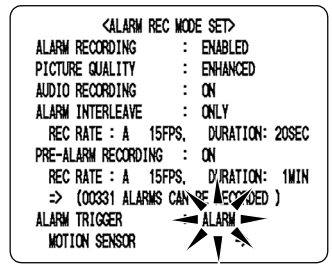
- Pre-alarm recording is carried out over the period before alarm input as set by “DURATION”. In order to playback pre-alarm recordings, carry out alarm search (using the [SEARCH] button). (→P.27)
  As playback begins at the point of alarm occurrence, use the shuttle dial to move back into the area of pre-alarm recording.
- When normal recording and pre-alarm recording are performed simultaneously, audio will not be recorded together with pre-alarm video.

Setting the alarm trigger

Use this setting to indicate how alarms are to be detected.

1 Turn the jog dial to select “ALARM TRIGGER”, and then turn the shuttle dial clockwise.

“ALARM” flashes in the “ALARM TRIGGER” field.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : A 15FPS, DURATION: 1MIN
=> (00331 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR

2 Turn the jog dial to select an alarm detection method, and then turn the shuttle dial clockwise.

[Settings] (◆ indicates the default setting)

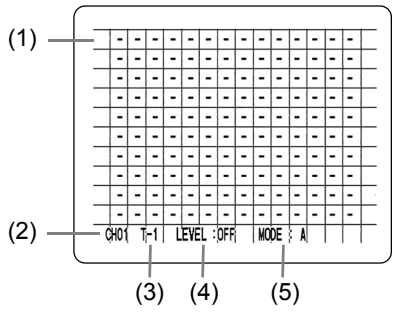
Setting	Description
◆ALARM	Alarm recording is performed when an external alarm is generated (i.e., when a switch is attached to the alarm input terminal on the rear panel, and the switch is activated).
SENSOR	Alarm recording is performed when a motion sensor detects movement. See the section on setting motion sensors for more details.
ALARM AND SENSOR	Alarm recording is performed when both the external alarm and a motion sensor are activated simultaneously.
ALARM OR SENSOR	Alarm recording is performed when either the external alarm or a motion sensor is activated.

[Setting conditions]

- When sensor selection has been made (i.e., “SENSOR”, “ALARM AND SENSOR”, or “ALARM OR SENSOR”) it will be necessary to set the motion sensors.

Setting the motion sensors

Use the following procedure to set motion sensor on video from each camera so that alarms can be detected.



(1) Motion sensor setting
Displays changes in response to the sensor condition, and settings are made turning the jog dial.
-: Sensor off
A or B: Sensor on

(2) Camera number display
Changes when a [CAMERA SELECT] button is pressed. Use this item to select the camera for which motion sensors are to be setup.

(3) Time period
Select an interval as set using “TIME PERIOD” on P.50.

(4) LEVEL
Sets the sensitivity level of the motion sensors.
OFF: No motion sensor has been set.
1 to 10: A motion sensor is set. Lower values correspond to higher sensitivity levels and vice versa.

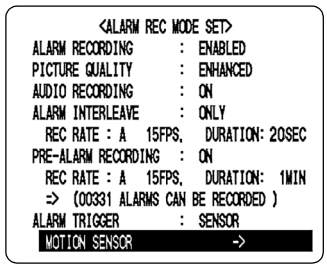
(5) MODE
Sets the detection method for the motion sensors. (→P.72)

- Refer to “NAMES AND FUNCTIONS OF PARTS” for more details regarding operation of the jog dial and shuttle dial. (→P.8)

1 Make timer settings for “TIME PERIOD A” and “TIME PERIOD B” from <TIME PERIOD SET>. (→P.50)

2 Turn the jog dial select “MOTION SENSOR”, and then turn the shuttle dial clockwise.

The motion sensor screen is displayed.


<ALARM REC MODE SET>
ALARM RECORDING : ENABLED
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM INTERLEAVE : ONLY
REC RATE : A 15FPS, DURATION: 20SEC
PRE-ALARM RECORDING : ON
REC RATE : A 15FPS, DURATION: 1MIN
=> (00331 ALARMS CAN BE RECORDED)
ALARM TRIGGER : SENSOR
MOTION SENSOR ->
CH01 T-1 LEVEL :OFF MODE : A

The cursor (blue) is displayed at the top left position.

Motion sensor screen

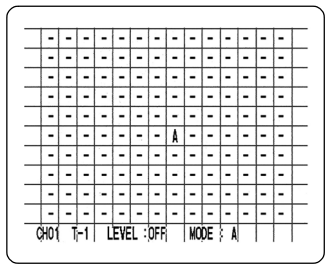
3 Press the [CAMERA SELECT] button.

Select the camera for which motion sensors are to be setup.

4 Turn the jog dial clockwise or counter-clockwise to move the cursor (blue) to the position where a sensor is to be set.

5 Turn the shuttle dial clockwise, and then turn the jog dial to select “A” or “B”.

“A” or “B”: Sensor set
“-” : No sensor



6 Turn the shuttle dial clockwise.

After confirming this setting, the cursor (blue) moves one position to the right.

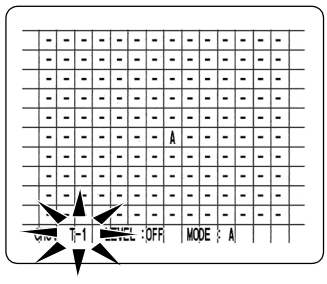
7 Use this procedure to set other sensor positions.

NOTE

- All sensors on the same line as the cursor can be modified simultaneously by pressing the [MENU RESET] button. (A → B → -)

8 Turn the jog dial to move the cursor to "T-1", and then turn the shuttle dial clockwise.

"T-1" flashes.

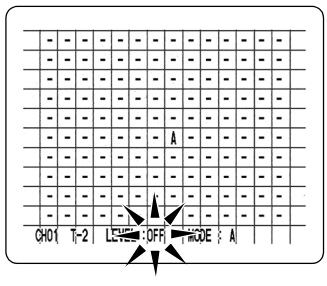


9 Turn the jog dial to select T-1, T-2, T-3, or T-4, and then turn the shuttle dial clockwise.

The cursor moves to "LEVEL".

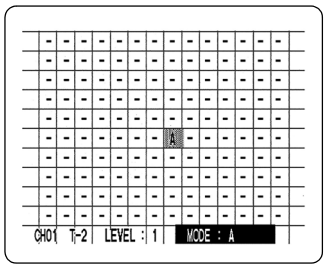
10 Turn the shuttle dial clockwise.

"OFF" flashes for "LEVEL".



11 Turn the jog dial to set the sensitivity (OFF or 1 through 10), and then turn the shuttle dial clockwise.

The cursor moves to "MODE".

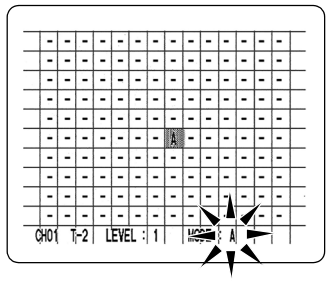


[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	Motion sensing is not carried out.
1 to10	Motion sensing is carried out. Lower values correspond to higher sensitivities.

12 Turn the shuttle dial clockwise.

"A" flashes for the "MODE".



13 Turn the jog dial to select a "MODE", and then turn the shuttle dial clockwise.

The mode selection is confirmed and the cursor returns to the top left position.

[Settings] (◆ indicates the default setting)

Setting	Description
◆A	The motion sensor alarm is triggered when a moving object is detected in A.
B	The motion sensor alarm is triggered when a moving object is detected in B.
A AND B	The motion sensor alarm is triggered when a moving object is detected by a sensor in both A and B.
A AND NB	By setting A to important points (or suspected points of motion) and setting B to non-moving points, motion can be detected at point A even when the overall brightness changes and in other situations where motion at both A and B would normally be detected.
A TO B	The motion sensor alarm is triggered when an object is detected moving from A to B. (within 2 seconds from A to B)
B TO A	The motion sensor alarm is triggered when an object is detected moving from B to A. (within 2 seconds from B to A)
C	A motion sensor alarm is triggered when the entire image changes uniformly. In this way, sprays and other similar measures can be protected against. (No sensor settings are needed for this mode.)

14 Set "LEVEL" and "MODE" for T-2 through T-4 using the same procedure (i.e., steps 8 through 13).

CAUTION

- Motion sensor positions are common for T-1 through T-4, and different settings cannot be made.

15 Turn the shuttle dial counter-clockwise.

Motion sensor settings are confirmed and the <ALARM REC MODE SET> screen is displayed once again.

■ To stop motion sensor recording

Set the sensitivity level from the motion sensor setting screen to “OFF”.

NOTE

- The period for “T-1” through “T-4” as set in step 9 changes to that of “TIME PERIOD A” or “TIME PERIOD B” on P.50.

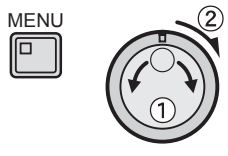
CAUTION

- The sensitivity level can be checked using the setting screen. When motion is detected, the sensor color changes from green to red, and a buzzer is sounded. If detection is too sensitive, an alarm can be triggered even by slight changes in lighting; accordingly, the sensitivity level should be set to match the camera location.

Setting alarm operation and display

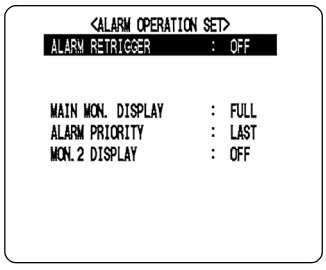
1 Press the [MENU] button and turn the jog dial to select “2. RECORD SET”, and then turn the shuttle dial.

The <RECORD SET> screen is displayed.



2 Turn the jog dial to select “8. ALARM OPERATION SET”, and then turn the shuttle dial clockwise.

The <ALARM OPERATION SET> screen is displayed with the cursor positioned on “ALARM RETRIGGER”.



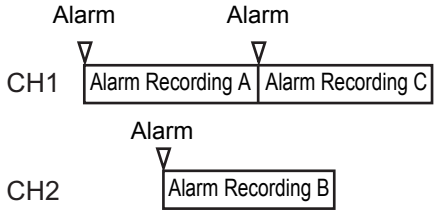
3 Turn the shuttle dial clockwise.

“OFF” flashes in the “ALARM RETRIGGER” field.

4 Turn the jog dial to set the alarm trigger to “ON”, and then turn the shuttle dial clockwise.

The cursor moves to “MAIN MON. DISPLAY”.

[Settings] (◆ indicates the default setting)

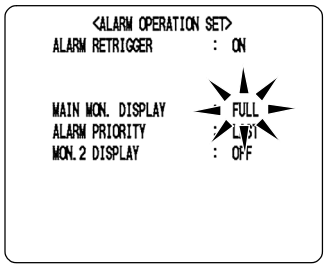
Setting	Description
◆OFF	Even if a new alarm is received on the same channel during alarm recording, the duration is not extended.
ON	If a new alarm is received on the same channel during alarm recording, the duration is extended and both alarms are treated as one. (Example: Input in the alarm sequence A → B → C) However, if the new alarm is on a different channel, the alarms are treated separately. (Example: Input in the alarm sequence A → B → C) Example: 

SETTINGS

Setting alarm display

1 Turn the jog dial to select “MAIN MON. DISPLAY”, and then turn the shuttle dial clockwise.

“FULL” starts to flash for “MAIN MON. DISPLAY”.



[Settings] (◆ indicates the default setting)

Setting	Description
◆FULL	When an alarm is detected, the video on the channel containing the alarm is displayed in full screen format on the main monitor.
6	When an alarm is detected, a multi-6 screen display is presented on the main monitor.
NC	The main monitor’s display does not change when an alarm is detected.

2 Turn the jog dial to set “MAIN MON. DISPLAY”, and then turn the shuttle dial clockwise.

The cursor moves to “ALARM PRIORITY”.

3 Turn the shuttle dial clockwise and turn the jog dial to set “ALARM PRIORITY”, and then turn the shuttle dial clockwise once again.

The cursor moves to “MON.2 DISPLAY”.

[Settings] (◆ indicates the default setting)

Setting	Description
◆LAST	When a number of alarms are occurring, the most-recent alarm video is given priority.
FIRST	When a number of alarms are occurring, only the video for the first alarm is displayed. However, if the duration for the alarm with the first input expires, video for the next alarm will be displayed.
SWITCH	When a number of alarms are occurring, the display switches between the video from the corresponding cameras, showing each for one second.

CAUTION

- After an alarm duration has ended, the display returns to the screen prior to alarm input.

4 Turn the shuttle dial clockwise and turn the jog dial to set “MON.2 DISPLAY” (ON/OFF), and then turn the shuttle dial clockwise.

The cursor moves to “ALARM RETRIGGER”.

[Settings] (◆ indicates the default setting)

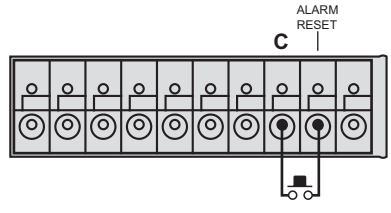
Setting	Description
ON	When an alarm occurs, the corresponding video is displayed on the monitor 2.
◆OFF	No alarm video is displayed on the monitor 2.

5 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

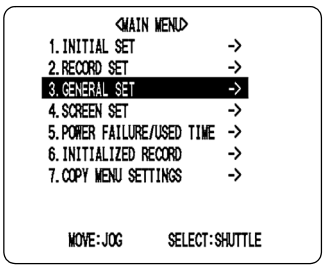
Canceling alarms

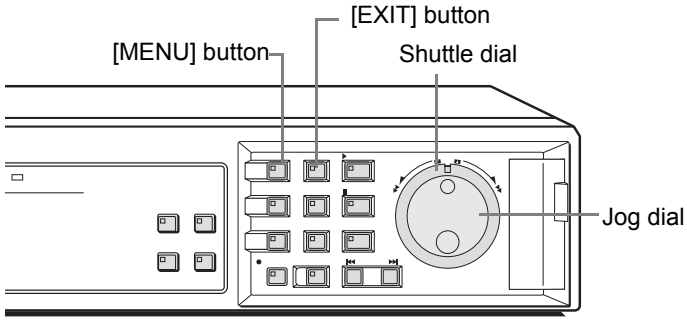
To forcibly cancel an alarm during alarm operation, press the [CAMERA SELECT] button for the camera inputting the alarm and hold it for approximately 3 seconds. Alternatively, connect a switch between the alarm reset terminal and C (the grounded terminal), and turn on the switch to cancel any alarm that is occurring.



4 GENERAL SET

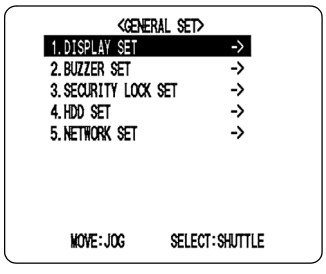
Main menu

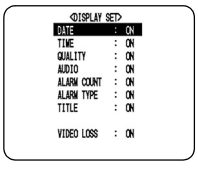
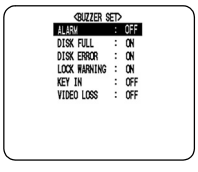
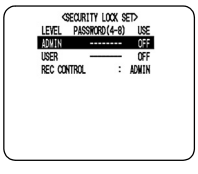
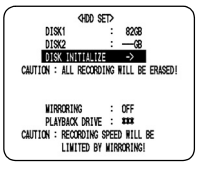
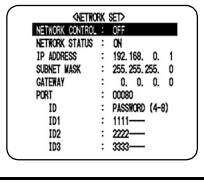

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE



General settings

The <GENERAL SET> is used to make the following settings.



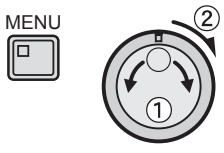
	Setting	Description	Ref.
1		**<DISPLAY SET>** Switches display items such as date and time from the operation display area. Settings can also be made for situations where video signals are lost.	P.76 P.77
2		**<BUZZER SET>** Turns the buzzer on or off.	P.78
3		**<SECURITY LOCK SET>** Lets you set passwords to prevent unauthorized users from operating the digital video recorder.	P.79
4		**<HDD SET>** Allows confirmation of hard disk capacity and performs initialization. Settings can also be made for mirroring.	P.81
5		**<NETWORK SET>** Allows the digital video recorder to be connected to a PC via a network.	P.82
6		**<RS-485 SET>** Lets you make settings when using RS-485.	P.85

Setting data display

Use the following procedure to remove the date, time, or other information from the operation display area. All items are set to “ON” by default. Where necessary, the required items can be turned off.

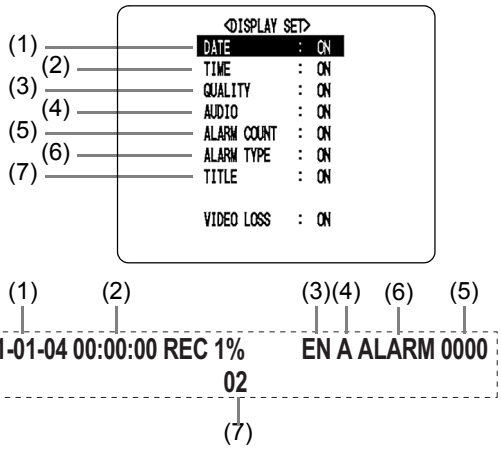
1 Press the [MENU] button and turn the jog dial to select “3. GENERAL SET”, and then turn the shuttle dial clockwise.

The <GENERAL SET> screen is displayed.



2 Turn the jog dial to select “1. DISPLAY SET”, and then turn the shuttle dial clockwise.

The <DISPLAY SET> screen is displayed.



SETTINGS

3 Turn the shuttle dial clockwise.

"ON" for the (1) "DATE" flashes. This can be set to "OFF" turning the jog dial to remove the date from the operation display area.

4 Turn the shuttle dial clockwise.

The cursor moves to the time entry.
The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values: Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values: Turn the shuttle dial clockwise.

5 Perform the following if so required.

(2) TIME (OFF):
Time is not displayed during recording or playback.

(3) QUALITY (OFF):
Picture quality mode is not displayed during recording or playback.

(4) AUDIO (OFF):
Audio recording settings are not displayed during recording or playback.

(5) ALARM COUNT (OFF):
The current number of alarms is not displayed.

(6) ALARM TYPE (OFF):
The type of alarm recording is not displayed.

(7) TITLE (OFF):
Camera titles are not displayed.

■ The content of the operation display area changes when the setting for "ALARM RECORDING" (→P.68) from <ALARM REC MODE SET> is switched.

When turned "OFF":
The alarm count and type are not displayed.
When turned "ENABLED":
The operation display area changes as follows.

- "ALARM" is displayed when alarm video is recorded or played back.
- "PRE" is displayed when pre-alarm video is recorded or played back.
- "ARCHIV" is displayed for playback from the archive area.

6 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

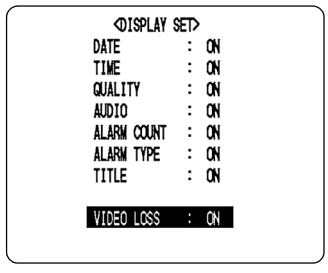
NOTE

- A maximum of 9,999 alarms can be displayed in the operation display area. When this number is exceeded, the count returns to 0000.

Setting display for video loss

Use the following procedure to display "VIDEO LOSS!" when the camera video is interrupted.

1 Turn the jog dial to select "VIDEO LOSS", and then turn the shuttle dial clockwise.



2 Turn the jog dial to display "ON", and then turn the shuttle dial clockwise.

3 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

NOTE

- After "VIDEO LOSS" is detected, it can be cancelled by performing either of the following.

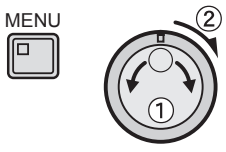
(1) Input a video signal.
(2) If no video input is required, use a [CAMERA SELECT] button to select the camera for which video loss was detected and then press and hold the same button.

Setting the buzzer

Use the following procedure to set a warning buzzer to sound for alarms or when hard disk space becomes insufficient.

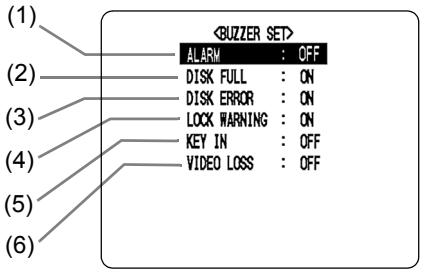
1 Press the [MENU] button, turn the jog dial to select “3. GENERAL SET”, and then turn shuttle dial clockwise.

The <GENERAL SET> screen is displayed.



2 Turn the jog dial to select “2. BUZZER SET”, and then turn the shuttle dial clockwise.

The <BUZZER SET> screen is displayed.



(1) ALARM (default setting: OFF)
Sounds the buzzer when a alarm occurs.

(2) DISK FULL (default setting: ON)
Sounds the buzzer when overwriting is forbidden and the hard disk capacity becomes insufficient.

(3) DISK ERROR (default setting: ON)
Sounds a buzzer when a hard-disk error occurs.

(4) LOCK WARNING (default setting: ON)
Sounds a buzzer if a button is pressed while the security lock is on. Specifically, the buzzer sounds twice with an interval of approximately 0.5 seconds.

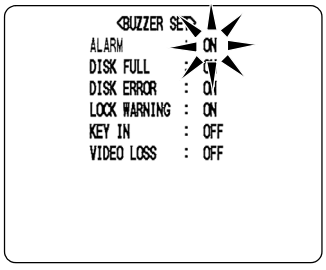
(5) KEY IN (default setting: OFF)
Sounds the buzzer when a button is pressed.

(6) VIDEO LOSS (default setting: OFF)
A buzzer is sounded upon signal loss.

3 Turn the shuttle dial clockwise.

“OFF” flashes for “ALARM”.

4 Turn the jog dial to display “ON”, and then turn the shuttle dial clockwise.



[Settings] (◆ indicates the default setting)

Setting	Description
◆OFF	The buzzer is not sounded when an alarm is generated.
ON	The buzzer is sounded when an alarm is generated.

Use the above procedure whenever necessary to change buzzer settings (ON or OFF).

5 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

NOTE

- To stop a buzzer, press any button or turn either the jog dial or shuttle dial.

Setting the security lock

Use the procedures described below to set a passwords and to prevent unauthorized users from operating the digital video recorder. If a button is pressed while the security lock is in operation, a buzzer will be sounded. Be sure to make a note of the passwords that are set.

■ Operation after setting passwords

Two password types can be set, one for administrators and one for users. The table below gives typical password setting combinations and lists how the digital video recorder operates for each.

Typical setting	Operation
LEVEL PASSWORD (4 - 8) USE ADMIN 123456AB ON USER AB123456 ON REC CONTROL : ADMIN	All operations are locked.
	Enter the user password to enable playback operations.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER AB123456 ON REC CONTROL : USER	All operations are locked.
	Enter the user password to enable playback and recording operations.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER -------- OFF REC CONTROL : ADMIN	Recording and menu operations are locked. Playback operations are locked.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER -------- OFF REC CONTROL : USER	Recording and menu operations are locked. Playback operations are locked.
	Enter the administrator password to enable all operations.
ADMIN -------- OFF USER -------- ON REC CONTROL : ADMIN	This setting cannot be carried out.
ADMIN -------- OFF USER -------- OFF REC CONTROL : ADMIN	All operations are possible. The security lock is not activated. (Default setting)

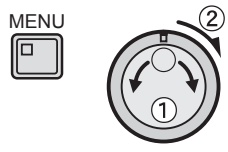
Setting the administrator password

Passwords comprise between 4 and 8 alphanumeric characters.
Characters that can be entered in passwords: 0 to 9, A to Z

Example: Setting “123456AB” as a password

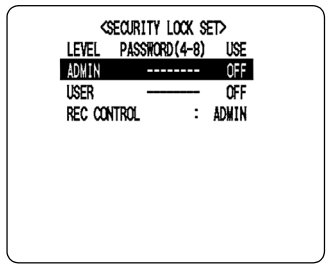
1 Press the [MENU] button and turn the jog dial to select “3. GENERAL SET”, and then turn the shuttle dial clockwise.

The <GENERAL SET> screen is displayed.



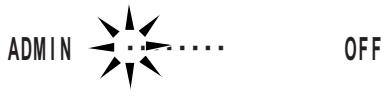
2 Turn the jog dial to select “3. SECURITY LOCK SET”, and then turn the shuttle dial clockwise.

The <SECURITY LOCK SET> screen is displayed.
The cursor moves to “ADMIN”.



3 Turn the shuttle dial clockwise.

The first password character “-” flashes.



4 Turn the jog dial to select a character (0 to 9, A to Z).

Example:
Turn the jog dial to select “1”.

5 Turn the shuttle dial clockwise.

The second password character “-” flashes.

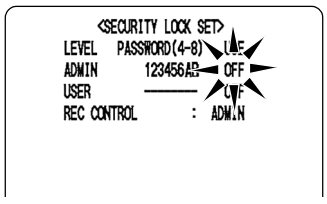
6 Use the same procedure to set “123456AB”.

NOTE

- **To set a 4-digit password**
  Turn the shuttle dial clockwise when "-" for the fifth character is flashing.

7 Following this, turn the shuttle dial clockwise.

The cursor moves to "OFF" (flashing).



8 Turn the jog dial to select "ON".

CAUTION

- If you select "OFF" for the "ADMIN" setting, you cannot set the "USER" password.

9 Turn the shuttle dial clockwise.

The cursor moves to "USER".

If you do not want to set a user password, the password setting procedure can now be ended. Turn the jog dial to move the cursor to "REC CONTROL" so that authorization for recording and playback operations may be set.

Setting the user password

Example: Setting "AB123456"

1 Turn the jog dial to move the cursor to "USER".

2 Turn the shuttle dial clockwise.

The first password entry bar "-" flashes.
Turn the jog dial to display "A".

USER A····· OFF

3 Turn the jog dial clockwise.

The second password entry bar "-" flashes.
Turn the jog dial to display "B".

Use the same procedure as for the administrator password to set "123456".

4 Following this, turn the shuttle dial clockwise.

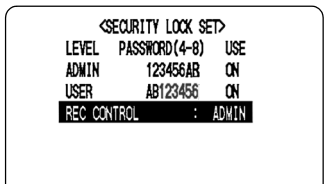
The cursor moves to "OFF" (flashing).

5 Turn the jog dial to select "ON", and then turn the shuttle dial clockwise.

The cursor moves to "REC CONTROL".

Setting operation priority for recording and playback

1 Turn the jog dial to move cursor to "REC CONTROL".



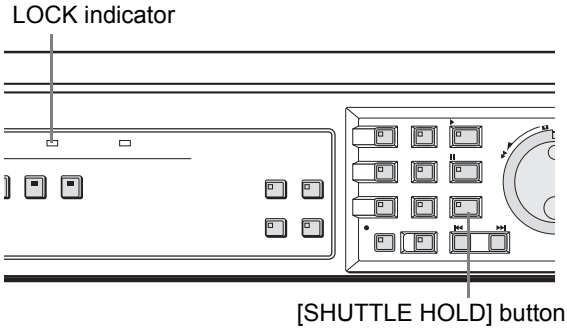
2 Turn the shuttle dial clockwise.

Turn the jog dial to select either "ADMIN" or "USER", and then turn the shuttle dial clockwise.
This completes the setting procedure.

3 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Setting the security lock



1 With the normal monitoring screen displayed, press the [SHUTTLE HOLD] button for approximately 3 seconds.

The LOCK indicator on the front panel lights up and a buzzer sounds to indicate activation of the security lock.

2 To confirm activation of this function, press the [MENU] button.

A password entry screen appears for about 5 seconds.

Canceling the security lock

3 Enter your password while the password entry screen is displayed.

Use the jog dial and the shuttle dial to perform this procedure.

CAUTION

- Enter the password set for administrators or users (such as “123456AB”).
  Be sure to enter the correct password for the operation (s) to be carried out. (→P.79)

4 Turn the shuttle dial clockwise.

The security lock is cancelled and the display returns to the normal screen.

NOTE

- If an administrator password was entered, the security lock is cancelled and the indicator is turned off.
- If a user password was entered, the security lock is partially cancelled and the indicator remains lit.

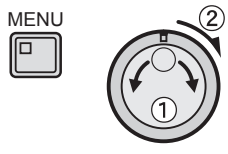
Setting and initializing the hard disk

This section describes how to initialize and expand the hard disk.
When a single hard disk is installed, the hard disk capacity is displayed for DISK 1; when two hard disks are installed, the capacity is displayed for “DISK 1” and “DISK 2”.

Initializing the hard disk

1 Press the [MENU] button and turn the jog dial to select “3. GENERAL SET”, and then turn the shuttle dial clockwise.

The <GENERAL SET> screen is displayed.



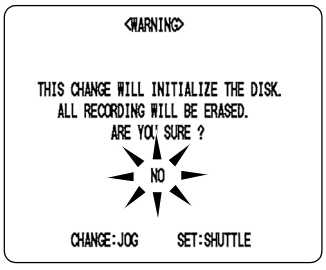
2 Turn the jog dial to select “4. HDD SET”, and then turn the shuttle dial clockwise.

The <HDD SET> screen is displayed.
The cursor moves to “DISK INITIALIZE”.

<HDD SET>
DISK1 : 82GB
DISK2 : ---GB
DISK INITIALIZE ->
CAUTION : ALL RECORDING WILL BE ERASED!
MIRRORING : OFF
PLAYBACK DRIVE : ***
CAUTION : RECORDING SPEED WILL BE LIMITED BY MIRRORING!

3 Turn the shuttle dial clockwise.

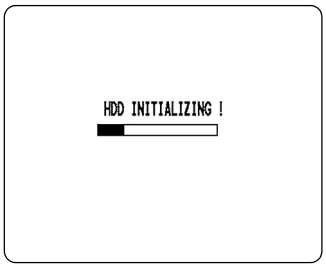
<WARNING> screen is displayed. “NO” flashes.



4 Turn the jog dial to select “YES”.

5 Turn the shuttle dial clockwise.

The “HDD INITIALIZING!” screen is displayed, and the hard disk is initialized.
When initialization has been completed, the display returns to the <HDD SET> screen.



6 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Expanding the hard disk capacity

Please contact your local store or service center regarding hard disk expansion. A special expansion kit will be required in order to perform this procedure.

[Setting conditions]

- Initialization must always be carried out after hard disk expansion.

NOTE

The <HDD SET> screen

- MIRRORING: When hard disk expansion has been carried out, the same video can be recorded to both hard disks. Accordingly, if a problem occurs with recording to one of the hard disks, the <HDD SET> screen can be used to select the other hard disk for provision of readable data. When mirroring has been set, the recording rate is controlled automatically (i.e., set to half of the normal value) and the appropriate care must be taken.
- PLAYBACK DRIVE: This parameter is used together with “MIRRORING” and it indicates which of the two hard disks is to be used to provide recordings for playback.
- If a playback problem occurs while mirroring is turned on, change the hard disk used for playback.

CAUTION

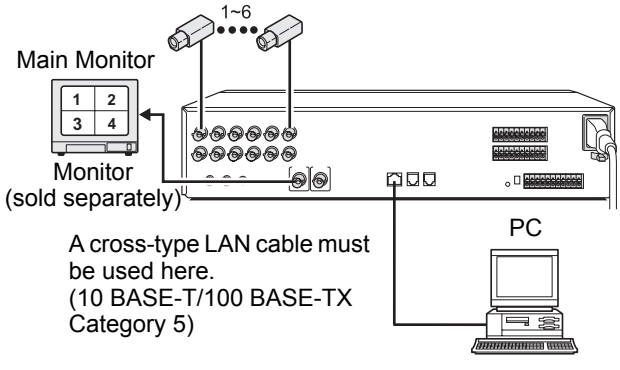
- If hard disk expansion has been carried out, initialization is performed for both hard disks simultaneously, and all data will be lost.
- All important recordings should be copied to CompactFlash cards or another storage medium before hard disk expansion.

Network settings

Use the following procedure to make digital video recorder menu settings and to monitor video from a PC via a network (LAN).
A LAN cable must be connected to the LAN terminal on the rear panel before proceeding.

Making network connections

- **Connecting to a PC directly (without using a hub)**



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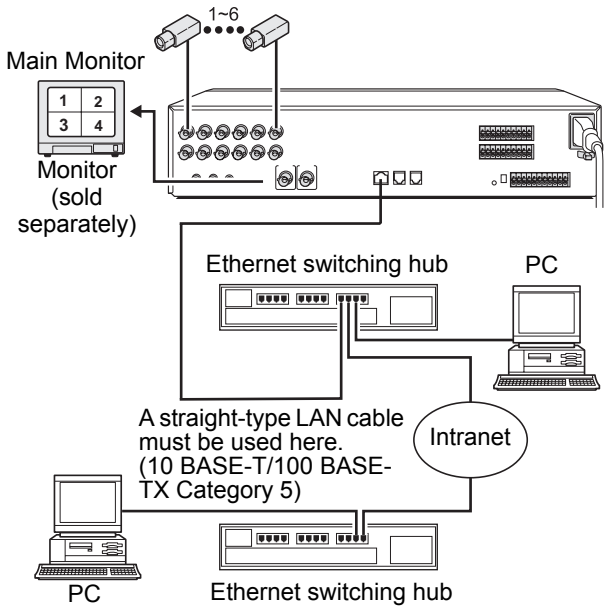
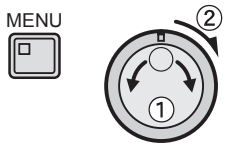
- **Connecting to an intranet (using a hub)**



Making network settings

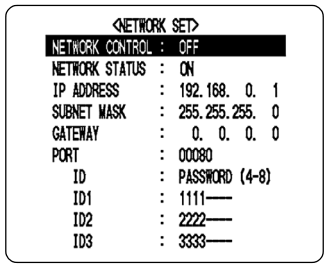
1 Press the [MENU] button and turn the jog dial to select "3. GENERAL SET", and then turn the shuttle dial clockwise.

The <GENERAL SET> screen is displayed.



2 Turn the jog dial to select "5. NETWORK SET", and then turn the shuttle dial clockwise.

The <NETWORK SET> screen is displayed.

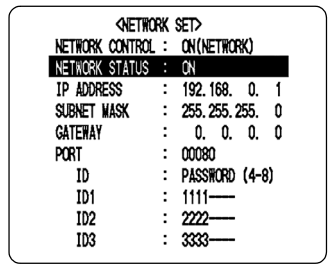

<NETWORK SET>
NETWORK CONTROL : OFF
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111——
ID2 : 2222——
ID3 : 3333——

3 Turn the shuttle dial clockwise.

"OFF" flashes for "NETWORK CONTROL".

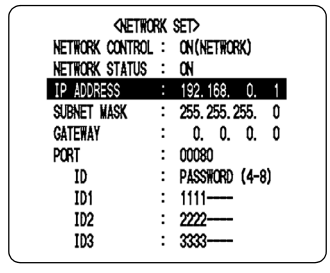
4 Turn the jog dial to set to "ON (NETWORK)" or "ON (DVR)", and then turn the shuttle dial clockwise.

The cursor moves to "NETWORK STATUS".


<NETWORK SET>
NETWORK CONTROL : ON(NETWORK)
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111——
ID2 : 2222——
ID3 : 3333——

5 Turn the jog dial to select "ON" or "OFF", and then turn the shuttle dial clockwise.

The cursor moves to "IP ADDRESS".


<NETWORK SET>
NETWORK CONTROL : ON(NETWORK)
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111——
ID2 : 2222——
ID3 : 3333——

[Settings] (◆ indicates the default setting)

Item	Setting	Description
NETWORK CONTROL	◆OFF	The digital video recorder cannot be controlled via a network.
	ON (NETWORK) ID: 1, 2, 3 Connection condition on DVR: Connection possible when not performing playback (incl. during copy) or menu display	Priority is given to operations on the PC. When playback is being performed on the PC, live video is displayed on the monitor connected to the digital video recorder. Furthermore, when connected to a PC, only operations for the switching of monitor display will be possible using the digital video recorder.
	ON (DVR) ID: 1 Connection condition on DVR: Connection possible when not performing playback (incl. during copy)	Priority is given to operations on the digital video recorder. Even if connected to a PC, recorder operations are given priority.
NETWORK STATUS	ON	During network connection, the message "NETWORK CONTROL" is displayed on the digital video recorder's monitor.
	OFF	The message "NETWORK CONTROL" is not displayed on the digital video recorder's monitor, even during network connection.

CAUTION

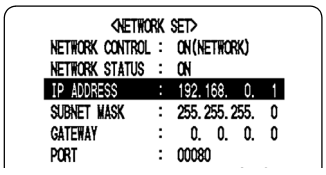
- Network control is only possible when “NETWORK CONTROL” has been set to “ON”.
- In order to prevent network control while the digital video recorder is connected to a network, set “NETWORK CONTROL” to “OFF”.

The following settings are carried out using the shuttle dial and jog dial.

- Vertical cursor movement: Turn the jog dial.
- Cursor movement to the right: Turn the shuttle dial clockwise.
- Modification of values : Turn the shuttle dial clockwise, and then with the setting value flashing, turn the jog dial.
- Confirmation of values : Turn the shuttle dial clockwise.

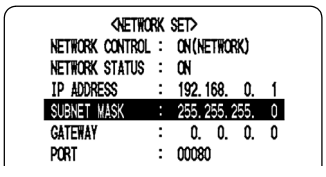
6 Set “IP ADDRESS”.

(Default setting: 192. 168. 0. 1)



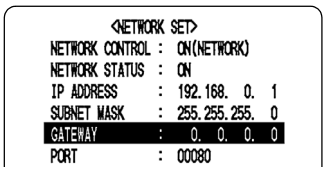
7 Set “SUBNET MASK”.

(Default setting: 255. 255. 255. 0)



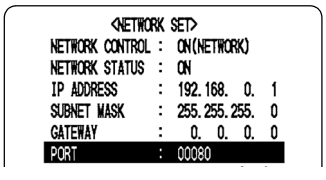
8 Set “GATEWAY”.

(Default setting: 0. 0. 0. 0)



9 Set “PORT”.

(Default setting: 00080)



CAUTION

When connecting the digital video recorder to a network, check the following settings with the network administrator.

- IP ADDRESS
- SUBNET MASK
- GATEWAY
- PORT

Setting passwords for the network

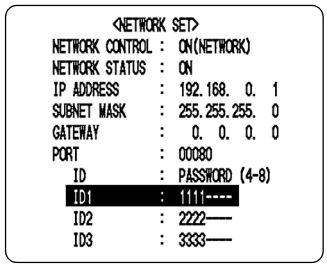
Three access levels are setup for network connection, and a password is set for each. Passwords comprise between 4 and 8 alphanumeric characters.

CAUTION

- “ID” or “PASSWORD (4-8)” at the top of the screen is the screen title. You cannot move the cursor to this item.

Example:
Setting “AB123456” to “ID1”

1 Turn the jog dial to select “ID 1”.


<NETWORK SET>
NETWORK CONTROL : ON(NETWORK)
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111----
ID2 : 2222----
ID3 : 3333----

[Settings]

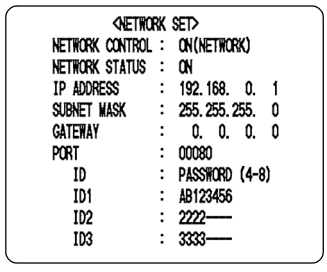
Setting	Description	Default setting
ID1	Allows video to be monitored via the network.	1111----
ID2	Allows video to be monitored and the playback or search/playback of recordings via the network.	2222----
ID3	Allows all of this recorder’s operations and settings to be performed.	3333----

2 Turn the shuttle dial clockwise.

The first password entry item “1” flashes.
Characters that can be entered in passwords: 0 to 9, A to Z

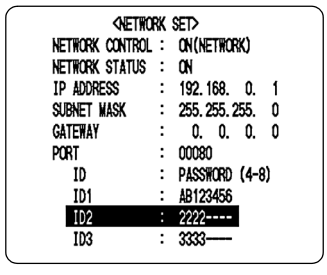
3 Enter the password using the shuttle dial and jog dial.

(1) Turn the jog dial to select “A” and then turn the shuttle dial clockwise.
(2) The second entry item “1” flashes.Turn the jog dial to select “B” and then turn the shuttle dial clockwise.
(3) The third entry item “1” flashes. Repeat the same procedure to set “AB123456”.


<NETWORK SET>
NETWORK CONTROL : ON(NETWORK)
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : AB123456
ID2 : 2222----
ID3 : 3333----

4 Following this, turn the shuttle dial clockwise.

5 Where necessary, use the same procedure to set the “ID2” and “ID3” passwords.


<NETWORK SET>
NETWORK CONTROL : ON(NETWORK)
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : AB123456
ID2 : 2222----
ID3 : 3333----

6 When setting has been completed, press the [EXIT] button.

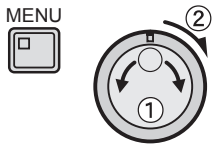
The setting procedure is ended and the display returns to the normal screen.

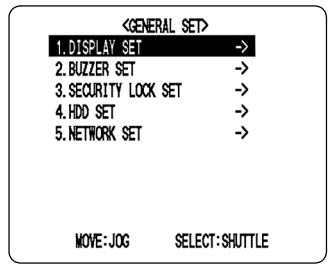
Setting RS-485

Use the following procedure to make RS-485 settings. Connect the digital video recorder's RS-485 (A, B) control terminals on the rear panel to the system controller or similar device.

1 Press the [MENU] button and turn the jog dial to select “3. GENERAL SET”, and then turn the shuttle dial clockwise.

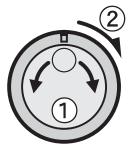
The <GENERAL SET> screen appears.





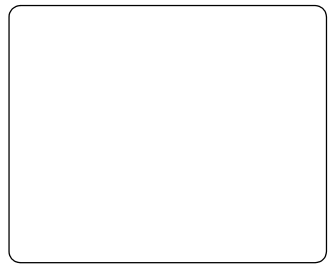
2 Turn the jog dial to select “4. RS-485 SET”, and then turn the shuttle dial clockwise.

The <RS-485 SET> screen is displayed with the cursor positioned on “DATA SPEED”.



3 Turn the shuttle dial clockwise and turn the jog dial to set “DATA SPEED”, and then turn the shuttle dial clockwise.

The cursor moves to “STATUS INFO”.

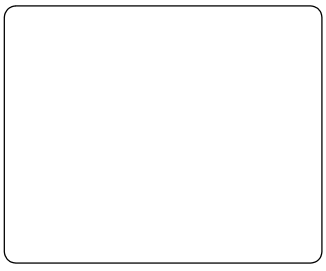


[Settings] (◆ indicates the default setting.)

Setting	Description
◆DATA SPEED	2400, 4800, 9600, 19200

4 Turn the shuttle dial clockwise and turn the jog dial to set “STATUS INFO”, and then turn the shuttle dial clockwise.

The cursor moves to “ALARM INFO”.



[Settings] (◆ indicates the default setting.)

Setting	Description
◆ON	Status information is transmitted.
OFF	Status information is not transmitted.

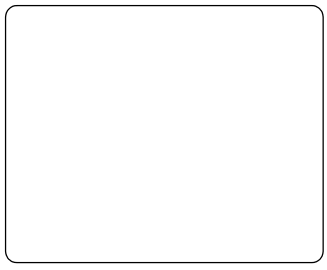
5 Turn the shuttle dial clockwise and turn the jog dial to set “ALARM INFO”, and then turn the shuttle dial clockwise.

The cursor moves to “ADDRESS”.

[Settings] (◆ indicates the default setting.)

Setting	Description
◆ON	Alarm information is transmitted.
OFF	Alarm information is not transmitted.

6 Turn the shuttle dial clockwise and turn the jog dial to set “ADDRESS”, and then turn the shuttle dial clockwise.

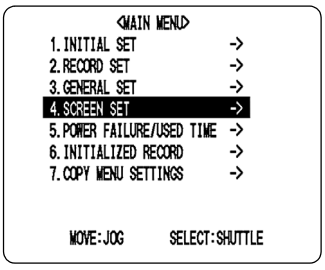


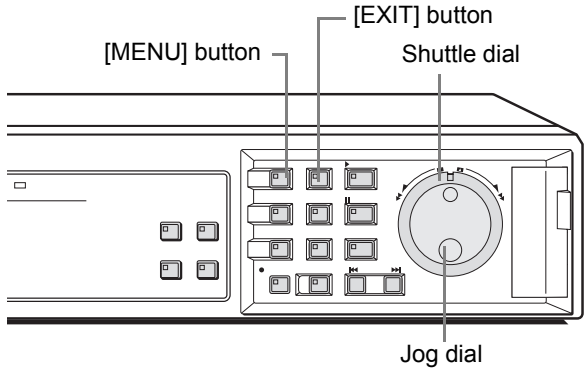
[Setting conditions]
Addresses between “0” and “127” can be set for this unit.

7 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

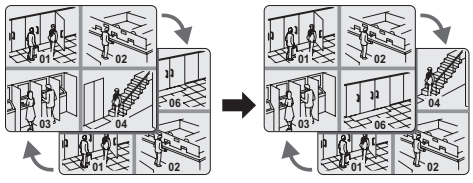
Main Menu


<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE



Setting quad and multi 6 display

Use the following procedure to change the display positions for cameras in quad and multi 6 screens.



CAUTION

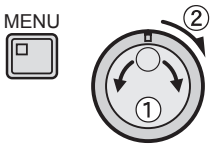
- Each camera can only be displayed in one position on any screen.

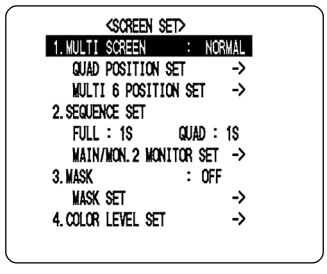
Setting quad positions

Example:
Displaying Camera No. 05 in quad position 01

1 Press the [MENU] button and turn the jog dial to select to "4. SCREEN SET", and then turn the shuttle dial clockwise.

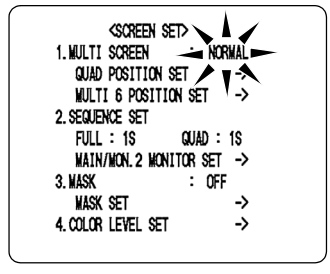
The <SCREEN SET> screen is displayed.The cursor moves to "1. MULTI SCREEN".




<SCREEN SET>
1. MULTI SCREEN : NORMAL
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->

2 Turn the shuttle dial clockwise.

"NORMAL" flashes for "1. MULTI SCREEN".

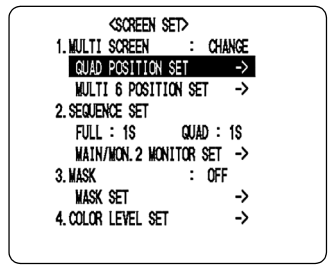

<SCREEN SET>
1. MULTI SCREEN : NORMAL
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->

3 Turn the jog dial to select "CHANGE", and then turn the shuttle dial clockwise.

The cursor moves to "QUAD POSITION SET".

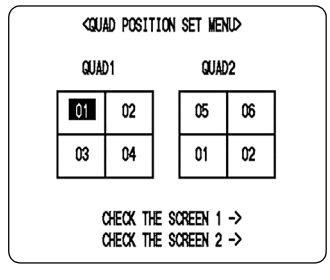
[Settings] (◆ indicates the default setting)

Setting	Description
◆NORMAL	The display sequence for cameras is not changed.
CHANGE	The display sequence for cameras is changed.


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->

4 Turn the shuttle dial clockwise.

The <QUAD POSITION SET MENU> screen is displayed with the cursor positioned on "01".

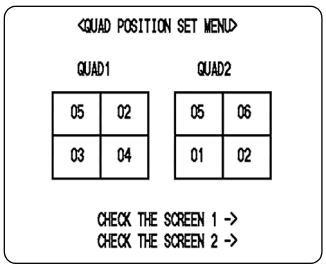


5 Turn the shuttle dial clockwise, and then turn the jog dial to select “05”.

“05” flashes.

6 Turn the shuttle dial clockwise.

“01” changes to “05”.

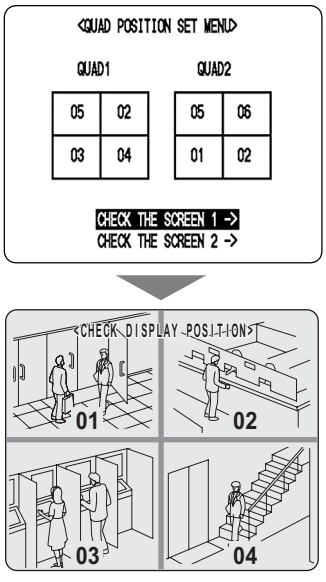


Checking modified screen positions

Select one of the “CHECK THE SCREEN” at the bottom of the modification screen to confirm that the modified screen positions are as intended.

7 Turn the jog dial to select “CHECK THE SCREEN 1” or “CHECK THE SCREEN 2”, and then turn the shuttle dial clockwise.

Pattern 1 or pattern 2 is displayed. Turn the shuttle dial counter-clockwise to return to the <QUAD POSITION SET MENU> screen.



8 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Setting multi 6 positions

Example:
Displaying Camera No. 6 in multi 6 position 01 (for multi 6 display)

1 Turn the jog dial to select “1. MULTI SCREEN”, and then turn the shuttle dial clockwise.

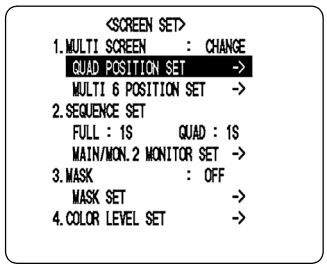
“NORMAL” flashes.

2 Turn the jog dial to select “CHANGE”, and then turn the shuttle dial clockwise.

The cursor moves to “QUAD POSITION SET”.

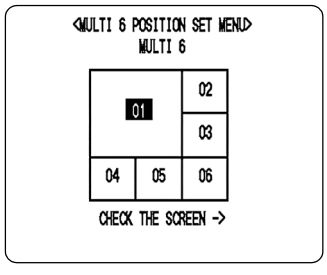
[Settings] (◆ indicates the default setting)

Setting	Description
◆NORMAL	The display sequence for cameras is not changed.
CHANGE	The display sequence for cameras is changed.


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON. 2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->
SETTINGS

3 Turn the jog dial to select “MULTI 6 POSITION SET”, and then turn the shuttle dial clockwise.

The <MULTI 6 POSITION SET MENU> screen is displayed with the cursor positioned on “01”.

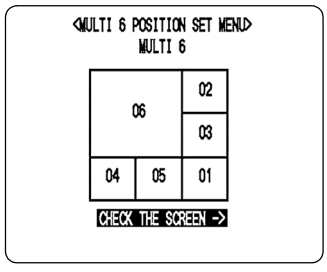


4 Turn the jog dial to select the cursor to Camera No. “06”, and then turn the shuttle dial clockwise.

“06” flashes.

5 Turn the jog dial to set “01”, and then turn the shuttle dial clockwise.

“06” changes to “01” and vice versa.
Turn the shuttle dial counter-clockwise to return to the <MULTI 6 POSITION SET MENU> screen.



NOTE

- To confirm the modified screen positions, move the cursor to “CHECK THE SCREEN” and then turn the shuttle dial clockwise. (→Step 7, P.88)

6 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

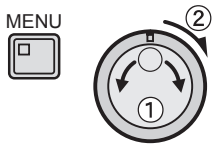
Setting the period and monitors for automatic screen selection

Use the following procedure to scroll through video from all cameras using a specified period.
A switching time for automatic selection can only be set for full screen and quad display.

Example:
Automatic switching of a full screen every 5 seconds.

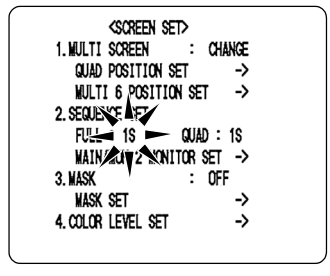
1 Press the [MENU] button and turn the jog dial to select “4. SCREEN SET”, and then turn the shuttle dial clockwise.

The <SCREEN SET> screen is displayed.The cursor moves to “1. MULTI SCREEN”.



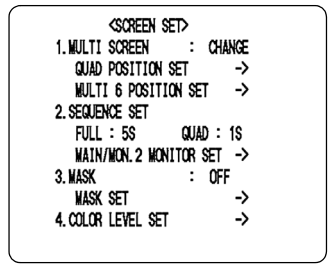
2 Turn the jog dial to move the cursor to “FULL” or “QUAD” from “2. SEQUENCE SET”, and then turn the shuttle dial clockwise.

“1S” flashes for “FULL”.


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->>

3 Turn the jog dial to set change the period to “5S”, and then turn the shuttle dial clockwise.

Automatic selection is set to a period of 5 seconds.


<SCREEN SET>
1. MULTI SCREEN : CHANGE
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 5S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->>

NOTE

- Use “QUAD” instead of “FULL” to set a period for automatic quad selection.
- The switching period can be set anywhere between 1 and 30 seconds.

4 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Setting the main monitor and monitor 2

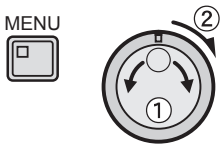
Example:
Specifying a monitor to display each camera's video at the set period (as indicated by TIME PERIOD A and TIME PERIOD B).

1 Make timer settings for "TIME PERIOD A" and "TIME PERIOD B" from <TIME PERIOD SET>. (→P.50)

Specify "TIME PERIOD A" and "TIME PERIOD B".

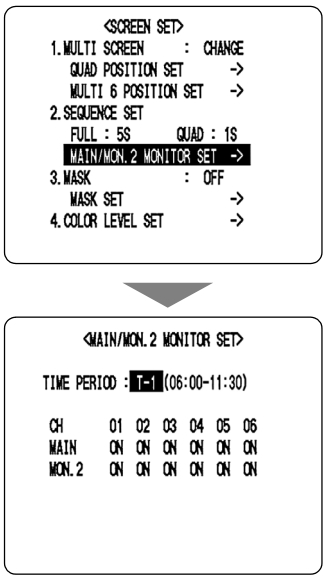
2 Press the [MENU] button and turn the jog dial to select "4. SCREEN SET", and then turn the shuttle dial clockwise.

The <SCREEN SET> screen is displayed. The cursor moves to "1. MULTI SCREEN".



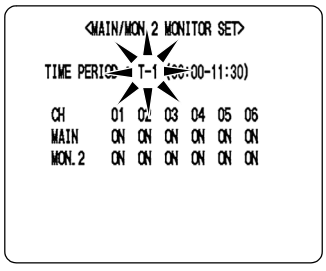
3 Turn the jog dial to move the cursor to "MAIN/MON.2 MONITOR SET", and then turn the shuttle dial clockwise.

The <MAIN/MON.2 MONITOR SET> screen is displayed.



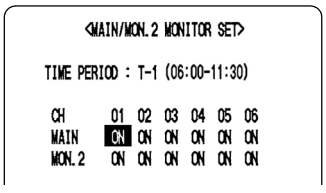
4 Turn the shuttle dial clockwise.

"T-1" starts to flash for the time period.



5 Turn the jog dial to select T-1, T-2, T-3, or T-4 for the time period, and then turn the shuttle dial clockwise.

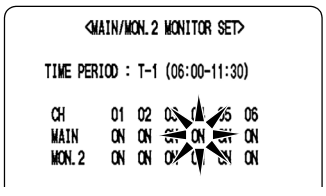
After setting the period, the cursor moves to channel 1 for the "MAIN".



6 Turn the jog dial clockwise or counter-clockwise to move the cursor to the main-monitor or monitor 2 channel to be changed.

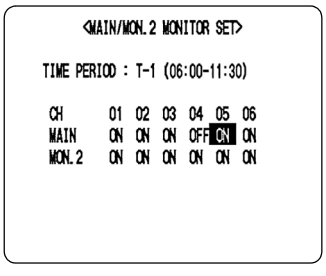
7 Turn the shuttle dial clockwise.

"ON" flashes.



8 Turn the jog dial to select "ON" or "OFF", and then turn the shuttle dial clockwise.

After confirming this setting, the cursor moves one position to the right.



9 Use the same procedure to set the remaining channels.

10 Press the [EXIT] button.

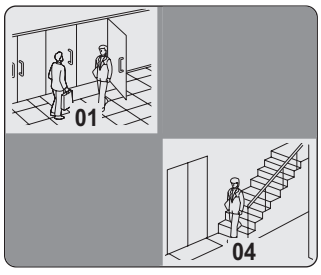
The setting procedure is ended and the display returns to the normal screen.

NOTE

- When setting a number of time periods together, use the jog dial to move the cursor to the next period after completing step 9, and repeat the process from step 4.
- The time period for "T-1" through "T-4" changes to that of "TIME PERIOD A" or "TIME PERIOD B" on P.50.

Setting masks

Use the following procedure to set video from a specific camera (including playback video) to be masked by a gray pattern when it is not to be shown on a monitor screen.



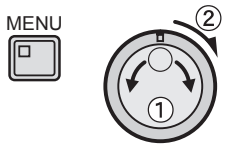
Example:
Preventing the display of unneeded camera video at the set period (as indicated by TIME PERIOD A and TIME PERIOD B).

1 Make timer settings for “TIME PERIOD A” and “TIME PERIOD B” from <TIME PERIOD SET>. (→P.50)

Specify “TIME PERIOD A” and “TIME PERIOD B”.

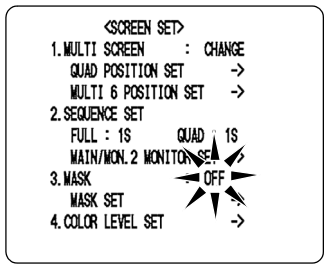
2 Press the [MENU] button, turn the jog dial to select “4. SCREEN SET”, and then turn the shuttle dial clockwise.

The <SCREEN SET> screen is displayed.The cursor moves to “1. MULTI SCREEN”.



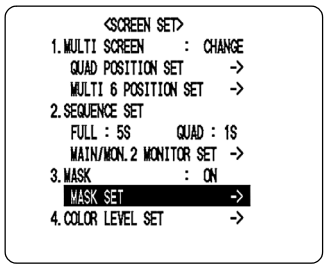
3 Turn the jog dial to move the cursor to “MASK”, and then turn the shuttle dial clockwise.

“OFF” flashes.



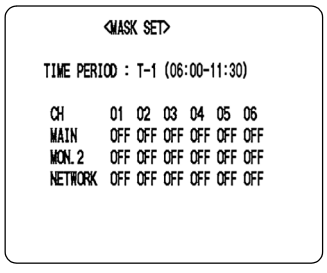
4 Turn the jog dial to select “ON”, and then turn the shuttle dial clockwise.

The cursor moves to “MASK SET”.



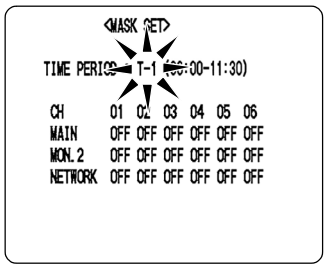
5 Turn the shuttle dial clockwise.

The <MASK SET> screen is displayed.


<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF OFF OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

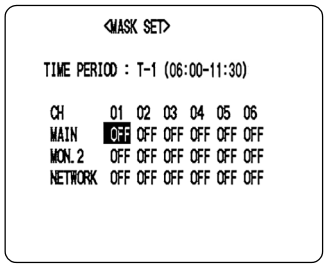
6 Turn the shuttle dial clockwise.

“T-1” starts to flash for “TIME PERIOD”.


<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF OFF OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

7 Turn the jog dial to select T-1, T-2, T-3, or T-4 for the time period, and then turn the shuttle dial clockwise.

After setting the period, the cursor moves to channel 1 for the “MAIN”.

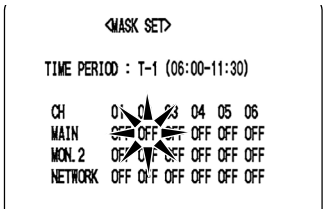

<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF OFF OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

NOTE

- Each camera can be set individually for the main monitor, the monitor 2, and network video.

8 Turn the jog dial clockwise or counter-clockwise to move the cursor to channel to be changed, and then turn the shuttle dial clockwise.

"OFF" flashes.


<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF OFF OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

[Settings] (◆ indicates the default setting)

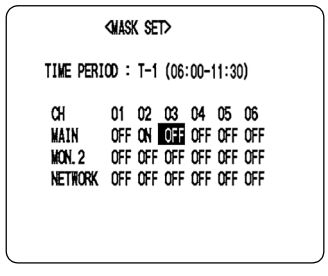
Setting	Description
◆OFF	Masking is not performed.
ON	Masking is performed.

NOTE

- When "ON" is set, the playback video will also be masked. (As a result, this video will not be visible.) When playing video, repeat step 3 and set masking to "OFF".

9 Turn the jog dial to select "ON" or "OFF", and then turn the shuttle dial clockwise.

After confirming this setting, the cursor moves one position to the right.


<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF ON OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

10 Use the same procedure to set the remaining channels.

11 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

NOTE

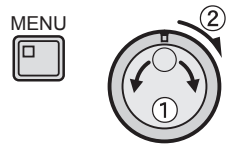
- When setting a number of time periods together, use the jog dial to move the cursor to the next period after completing step 10, and repeat the process step 6 through 10.
- The time period for "T-1" through "T-4" changes to that of "TIME PERIOD A" or "TIME PERIOD B" on P.50.
- Network mask settings are valid only for the user connecting to the network with ID1. Users connecting using ID2 and ID3 will be able to display all channels.

Setting the color level

Use the following procedure to adjust the color of video displayed on monitors.

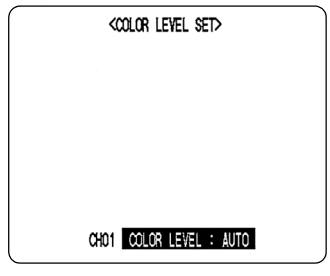
1 Press the [MENU] button, turn the jog dial to select "4. SCREEN SET", and then turn the shuttle dial clockwise.

The <SCREEN SET> screen is displayed. The cursor moves to "1. MULTI SCREEN".



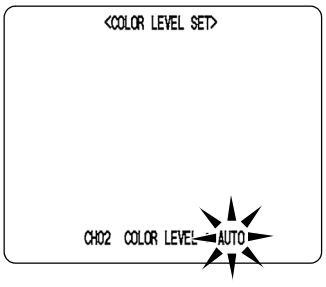
2 Turn the jog dial to select "4. COLOR LEVEL SET", and then turn the shuttle dial clockwise.

The <COLOR LEVEL SET> screen is displayed.



3 Press the [CAMERA SELECT] button for the camera whose color level is to be set, and then turn the shuttle dial clockwise.

"AUTO" flashes.



4 Turn the jog dial to select a "COLOR LEVEL" (AUTO or 1 through 10), and then turn the shuttle dial clockwise.

- AUTO: Camera levels are adjusted automatically. (Default value)
- 1 to 10: Manual adjustment to one of 10 levels. (Light (1) to Dark (10))

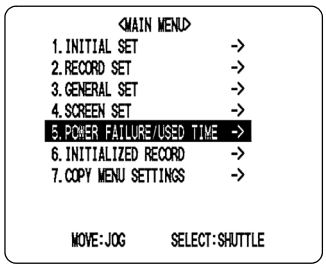
[Settings] (◆ indicates the default setting)

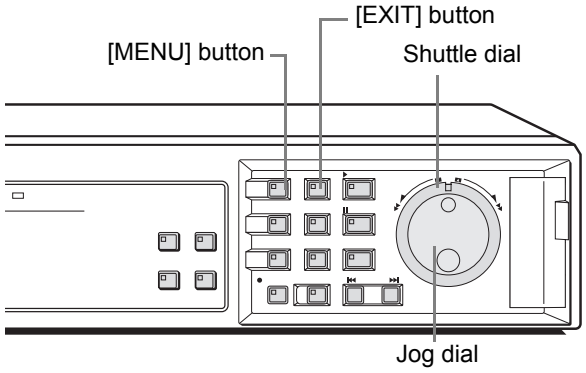
Setting	Description
◆AUTO	Camera levels are adjusted automatically.
1 to10	Manual adjustment to one of 10 levels. Light (1) to Dark (10)

5 Press the [EXIT] button.

The setting procedure is ended and the display returns to the normal screen.

Main Menu

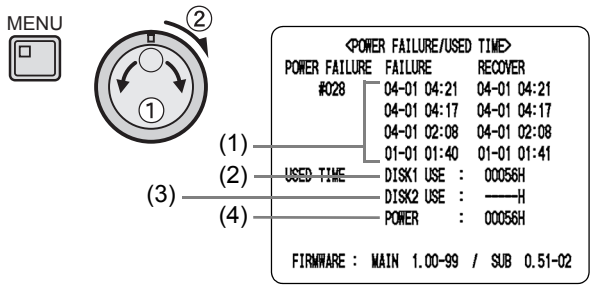

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE



Use the following procedure to check the date and time of power failures, the amount of hard disk operation time, and the amount of power-on time.

1 Press the [MENU] button and turn the select “5. POWER FAILURE/USED TIME”, and then turn the shuttle dial clockwise.

The <POWER FAILURE/USED TIME> screen is displayed.



Check the date and time of power failures and the amount of hard disk operation time.

(1) FAILURE/RECOVER
Display information in sequence for the four most recent power failures (i.e., the date and time of failure and recovery).
The number on the left is the number of power failures. (Example: #028). For all numbers above 999, the number “999” is displayed.

(2) DISK1 USE
Displays the total amount of operation time for disk 1.

(3) DISK2 USE
Displays the total amount of operation time for disk 2. When only one hard disk is installed, “------” is displayed.

(4) POWER
Displays the amount of power-on time for the digital video recorder.

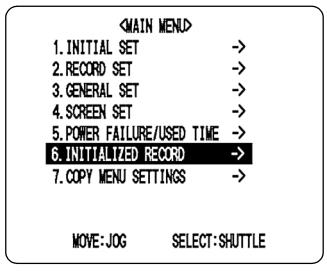
2 Press the [EXIT] button.

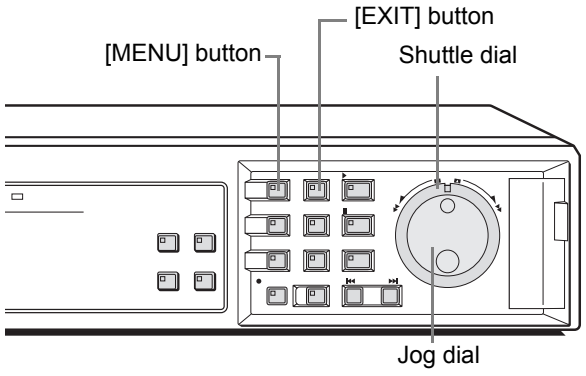
The display returns to the normal screen.

EXIT

7 INITIALIZED RECORD

Main menu

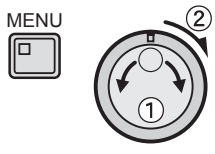

<MAIN MENU>
1. INITIAL SET ->
2. RECORD SET ->
3. GENERAL SET ->
4. SCREEN SET ->
5. POWER FAILURE/USED TIME ->
6. INITIALIZED RECORD ->
7. COPY MENU SETTINGS ->
MOVE:JOG SELECT:SHUTTLE

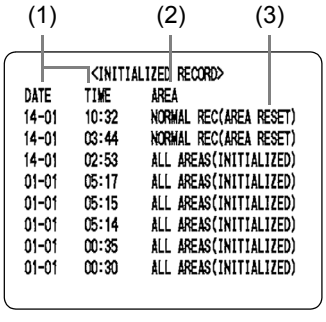


Use the following procedure to display the eight most recent entries in the initialization and re-recording log for the hard disk.

1 Press the [MENU] button and turn the jog dial to select “6. INITIALIZED RECORD”, and then turn the shuttle dial clockwise.

The <INITIALIZED RECORD> screen is displayed.





(1) DATE/TIME
Displays the date and time of the operation.

(2) AREA
Displays the area on which the operation was performed.

(3) Operation class
Displays the operation performed as either of the following:
- ●INITIALIZED
- ●AREA RESET

CAUTION

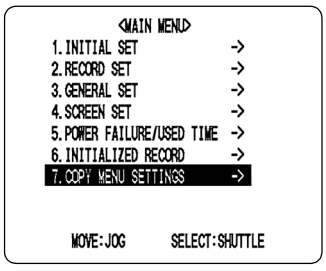
- “INITIALIZED” is displayed when recording areas have been changed.

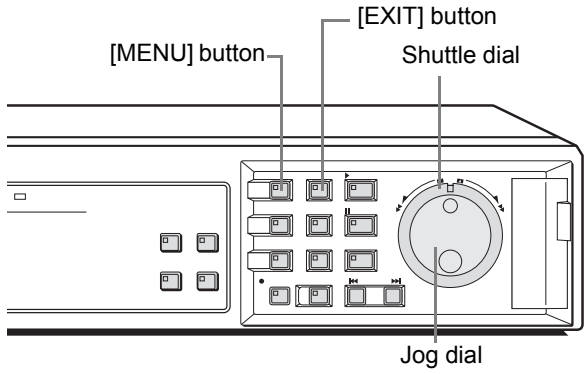
2 Press the [EXIT] button.

The display returns to the normal screen.

EXIT

Main Menu

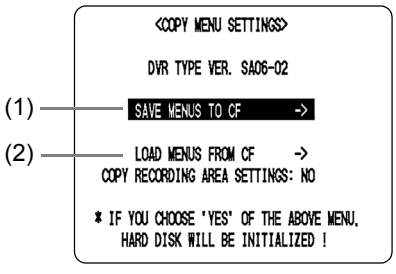




Use the following procedure to save menu settings on a CompactFlash card or to load settings from a CompactFlash card back into the digital video recorder. These functions make it easy to use the same settings on a number of different hard disk digital recorders.

1 Press the [MENU] button and turn the jog dial to select “7. COPY MENU SETTINGS”, and then turn the shuttle dial clockwise.

The <COPY MENU SETTINGS> screen is displayed.



(1) SAVE MENUS TO CF
This saves the menu settings to a CompactFlash card.

(2) LOAD MENUS FROM CF
This loads menu settings into the digital video recorder from a CompactFlash card.

Saving menu settings on a CompactFlash card

Insert a CompactFlash card into the CompactFlash card slot.

1 Turn the jog dial to select “SAVE MENUS TO CF”, and then turn the shuttle dial clockwise.

<WARNING> screen is displayed.

2 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

(1) The saving process begins.

(2) When this has been completed, “SAVING FINISHED!!” is displayed. A file named “MENUCOPY.TXT” is created in the CompactFlash directory.

Loading settings from a CompactFlash card

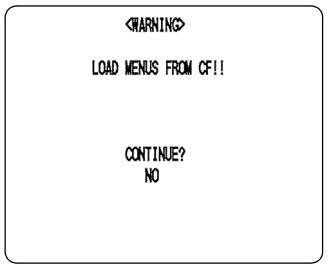
Use the following procedure to load menu settings saved on a CompactFlash card back into the digital video recorder.

CAUTION

- When loading a menu setting file into the recorder, you will be able to specify whether recording area settings are to be copied. Normally, “COPY RECORDING AREA SETTINGS” should be set to “NO”. If set to “YES”, hard disk initialization will be carried out as part of the loading process, and all recorded data will be lost.

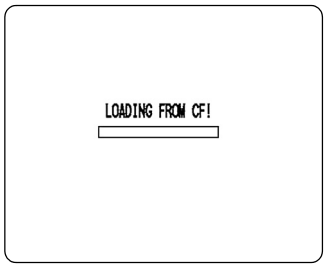
1 Turn the jog dial to select “LOAD MENUS FROM CF”, and then turn the shuttle dial clockwise.

<WARNING> screen is displayed.



2 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

(1) The loading process begins.



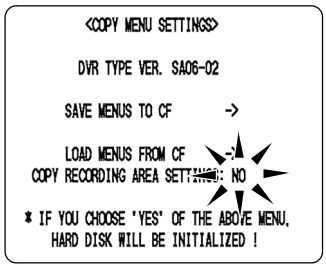
(2) When this has been completed, “SYSTEM INITIALIZING” is displayed and the display returns to the normal screen.

When copying recording area settings

Use the following procedure to copy recording area settings.

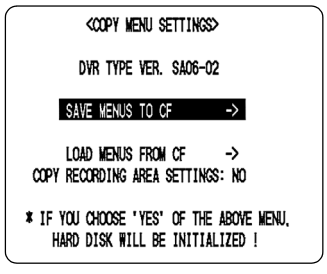
1 Turn the jog dial to select “COPY RECORDING AREA SETTINGS”, and then turn the shuttle dial clockwise.

“NO” flashes.



2 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

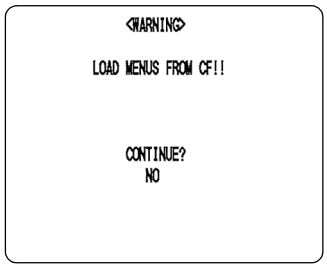
The cursor returns to “SAVE MENUS TO CF”.



3 Turn the jog dial to select “LOAD MENUS FROM CF”.

4 Turn the shuttle dial clockwise.

<WARNING> screen is displayed.



5 Turn the jog dial to select “YES”, and then turn the shuttle dial clockwise.

The loading process starts.
When this has been completed, “SYSTEM INITIALIZING” is displayed and the display returns to the normal screen.

CAUTION

- Normally, “COPY RECORDING AREA SETTINGS” should be set to “NO”. If set to “YES”, hard disk initialization will be carried out, and all recorded data will be lost.

1 INTERFACE SPECIFICATIONS

RS-485 specifications

Data format

Mode	Asynchronous
Character length	8 bits
Data transmission speed	2400, 4800, 9600, 19200 bps
Parity check	None
Stop bit	1 bit

Communication protocol

A proprietary Sanyo protocol (SSP: Security Serial Protocol) is used. Use of a special controller for operation is recommended. To obtain this controller, contact a Sanyo service center.

RS-485 termination switch settings

Termination settings

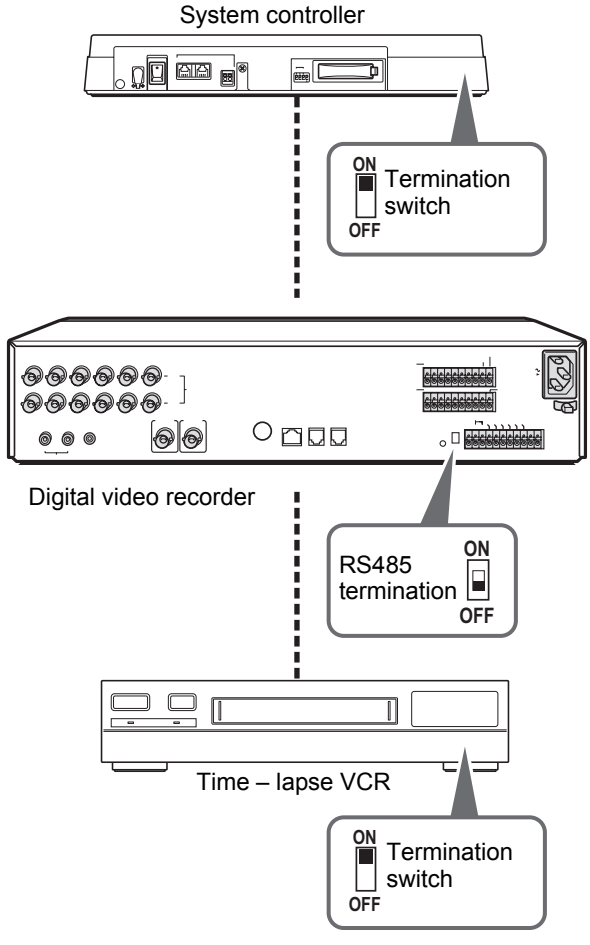
When connecting multiple devices, you must make termination settings on both end devices.

- Set the RS-485 termination switch of both end devices to ON.
- Be sure to set the RS-485 termination switches of all devices in between (devices other than the first and last devices) to OFF.

CAUTION

- If you don't make the correct termination settings, the incorrect data will be transmitted to each device.

Example



DVR/VCR command table

The table below shows the commands supported by the digital video recorder.

Left digit / Right digit	0	1	2	3	4	5	6	7
0							TIMER ON/OFF	
1								
2								
3						SHIFT←	SHIFT→	
4						SHIFT↑	SHIFT↓	MENU
5							SHIFT+ /RP UP	
6							SHIFT- /RP DOWN	
7								
8								
9							SECURITY LOCK ON	
A	ACK			PLAY	REV PLAY /SEARCH (DVR)		SECURITY LOCK OFF	
B	NAK							
C							GROUP SET	
D							GROUP CHECK	
E							GROUP CLEAR	
F				STOP	STILL			

Left digit / Right digit	8	9	A	B	C	D	E	F
0							CLOCK ADJUST	
1							MENU RESET	
2								
3								
4								
5								
6						T/L STATUS SENSE		
7						STATUS SENSE		
8								
9							CLOCK DOWNLOAD	
A					REC			REC/DUB REQUEST
B			FF					
C			REW					
D								RS-485 SEND START
E	OSD/EXIT			STATUS LOG2				RS-485 RCV CMF.
F				STATUS LOG1	REC STOP			

2 SPECIFICATIONS

Specifications

Product name		Digital video recorder with multiplexer function
Product number		DSR-3506P
Hard disk capacity		80 GB [Capability for expansion using 80, 160, 250, or 300 GB hard disks (sold separately)]
Television system		PAL signal standard
Image compression		M-JPEG
Picture resolution		720 x 288 (fields)
Recording type		Field recording
Picture quality		5 levels [Basic, Normal, Enhanced, Fine, Super Fine]
Recording rate		27 levels (60.00 to 0.03 FPS)
Recording areas		Normal recording area, Alarm recording area, Archive area
Magnification		x2 digital zoom using the [ZOOM] button
Search modes		Time/date search, Alarm search, Alarm thumbnail search, Archive area search, Motion detection search
Date/clock settings		Day, Month, Year (last two digits), Hours, Minutes, Seconds
Date and time positions		2 position; upper and lower (display may also be turned off)
Camera title display		Each channel; up to 10 alphanumeric characters and symbols (display may also be turned off)
Memory backup		Approximately 30 days (for 48 hours of electrification)
Video input terminal		VBS/VS, 1.0 V (p-p), 75 Ω, BNC (x6)
Video output terminal		Through output of each video input, BNC (x6)
Main monitor output terminal		VBS 1.0V (p-p), 75 Ω, BNC (x1)
Monitor 2 output terminal		VBS/VS 1.0V (p-p), 75 Ω, BNC (x1)
Audio input terminal		-8 dBs, 27 kΩ, unbalanced RCA (x1)
Audio output terminal		-8 dBs, 600 Ω, unbalanced RCA (x1)
Microphone input terminal		-60 dBs, 10 kΩ, unbalanced 3.5 mm pin jack (x1)
CompactFlash card slot		CompactFlash Type 2 (front panel) (x1)
Terminals	LAN terminal	10BASE-T/100BASE-TX, RJ-45 (x1)
	RS-485 terminal	RJ-11 (x2)
	Remote control input terminal	Two-wire voltage control (x2)
	Alarm input terminals	No-volt contacts (with a pulse width of 100 ms or more) (x6)
	Alarm output terminal	Active Low, Open collector Max. 500 mA (x1)
	Sensor alarm output terminals	Open collector, Low level active (Max. 25 mA) (x6)
	Alarm reset input terminal	No-volt contacts (with a pulse width of 100 ms or more) (x1)
	Non rec output terminal	Normal 5V DC, Low level active (x1)
	Clock adjust input terminal	No-volt contacts (with a pulse width of 100 ms or more) (x1)
	Clock adjust output terminal	Normal 5V DC, Low level active (x1)
	Warning output terminal	Normal 5V DC, Low level active (x1)
	Normal recording area disk full warning output terminal	Normal 5V DC, Low level active (x1)
	Alarm recording area disk full warning output terminal	Normal 5V DC, Low level active (x1)
	External timer input terminal	No-volt contacts (with a pulse width of 1 second or more) (x1)
Power supply voltage		120 to 240V AC, 50/60 Hz
Power consumption		XXX
Allowable operating temperature		5° to 40°
Allowable operating humidity		10% to 80%
Dimensions		420 (W) x 96 (H) x 364.5 (D) mm
Weight		6.2 kg with a HDD, 6.8 kg with 2 HDDs
Accessory		Power cord (x1), Core clamp (x1), Power cord tie (x1)

Note that product appearance and specifications are subject to change without prior notice.

Dimensions

Units: mm

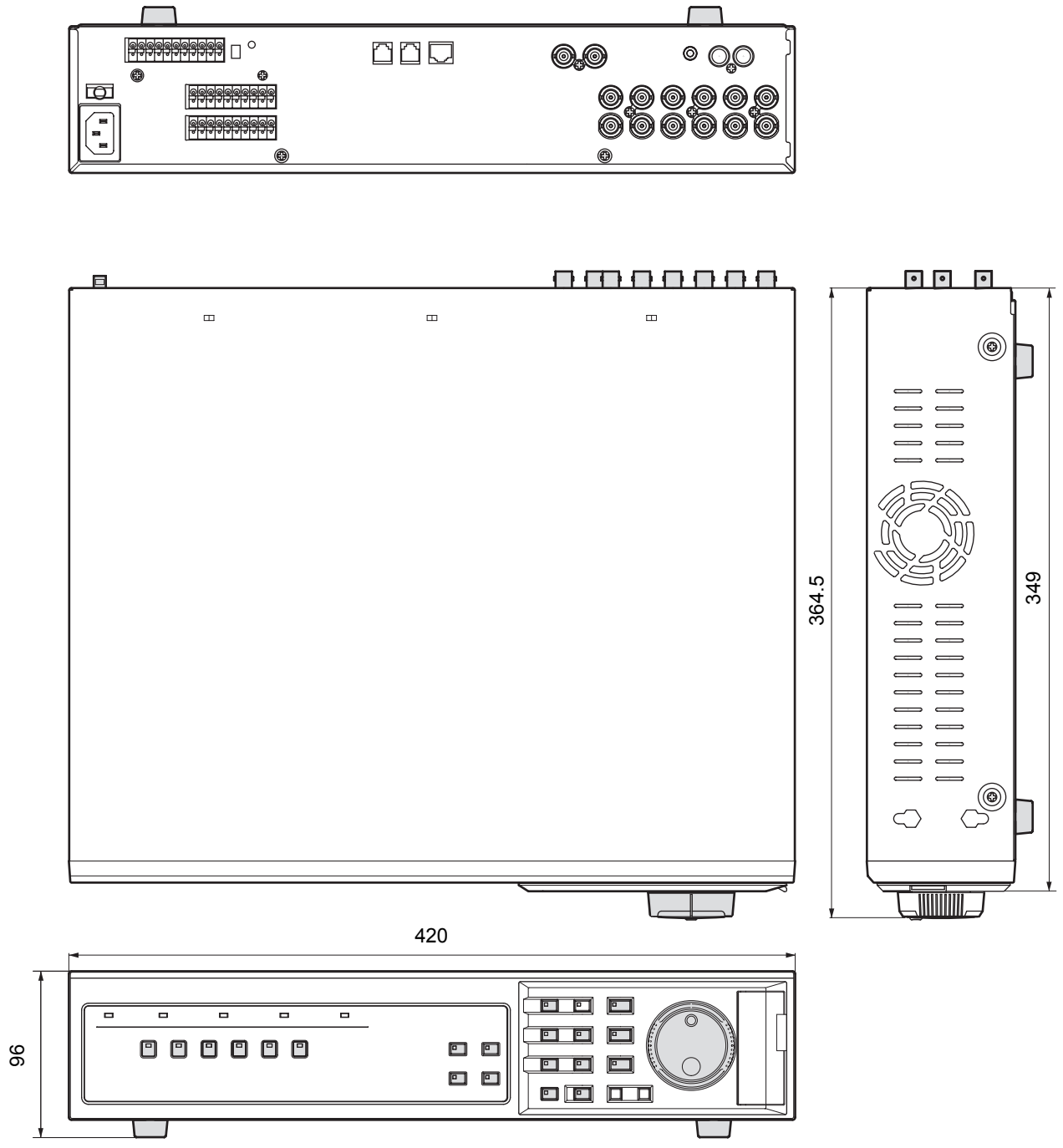


Table of recording rate and times

This products's recording time can be changed by modifying the recording rate and the recording picture quality.
The following table provides reference values for picture quality and recording rate in a situation where video is recorded to the normal recording area of this product's hard disk.

- The time setting for the normal recording area and the alarm recording area is determined by multiplying the following recording time by the percent display value for the normal recording area and the alarm recording area as specified using the menu's recording area settings.
- The recording time may change for different recording picture qualities.

■ Example: Recording to a 80 GB hard disk (100%-usage)

Recording rate FPS (field/sec)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
60.00	20H	14H	11H	8H	6H
30.00	41H	29H	22H	16H	13H
20.00	62H	44H	33H	24H	20H
15.00	82H	58H	44H	32H	27H
10.00	124H	88H	66H	48H	40H
7.50	165H	117H	88H	64H	54H
6.00	207H	146H	110H	80H	67H
5.00	248H	176H	132H	96H	81H
4.29	290H	205H	154H	112H	94H
3.75	331H	235H	176H	128H	108H
3.33	373H	264H	198H	144H	122H
3.00	414H	293H	220H	160H	135H
2.73	456H	323H	242H	176H	149H
2.31	539H	382H	286H	208H	176H
2.00	622H	440H	330H	240H	203H
1.67	746H	529H	396H	288H	244H
1.43	871H	617H	462H	336H	284H
1.25	995H	705H	529H	384H	325H
1.11	1120H	793H	595H	432H	366H
1.00	1244H	881H	661H	480H	406H
0.50	2489H	1763H	1322H	961H	813H
0.33	3734H	2645H	1983H	1442H	1220H
0.25	4978H	3526H	2645H	1923H	1627H
0.20	6223H	4408H	3306H	2404H	2034H
0.10	12447H	8816H	6612H	4809H	4069H
0.05	24894H	17633H	13225H	9618H	8138H
0.03	37341H	26450H	19837H	14427H	12207H

■ Example: After expansion to 160 GB (100%-usage)

Recording rate FPS (field/sec)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
60.00	41H	29H	22H	16H	13H
30.00	83H	59H	44H	32H	27H
20.00	124H	88H	66H	48H	40H
15.00	166H	118H	88H	64H	54H
10.00	249H	177H	132H	96H	81H
7.50	333H	236H	177H	128H	108H
6.00	416H	295H	221H	160H	136H
5.00	499H	354H	265H	193H	163H
4.29	583H	413H	309H	225H	190H
3.75	666H	472H	354H	257H	217H
3.33	749H	531H	398H	289H	245H
3.00	833H	590H	442H	321H	272H
2.73	916H	649H	486H	354H	299H
2.31	1083H	767H	575H	418H	354H
2.00	1249H	885H	663H	482H	408H
1.67	1499H	1062H	796H	579H	490H
1.43	1749H	1239H	929H	676H	572H
1.25	1999H	1416H	1062H	772H	653H
1.11	2249H	1593H	1195H	869H	735H
1.00	2499H	1770H	1327H	965H	817H
0.50	4999H	3541H	2655H	1931H	1634H
0.33	7498H	5311H	3983H	2897H	2451H
0.25	9998H	7082H	5311H	3863H	3268H
0.20	12498H	8852H	6639H	4828H	4085H
0.10	24996H	17705H	13279H	9657H	8171H
0.05	49992H	35411H	26558H	19315H	16343H
0.03	74988H	53116H	39837H	28972H	24515H

: Area in which sound recording is possible (when recording sound, the recording time is shorter than that shown above.)

■ **Example: After expansion to 300 GB (100%-usage)**

Recording rate FPS (field/sec)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
60.00	78H	55H	41H	30H	25H
30.00	156H	110H	83H	60H	51H
20.00	234H	166H	124H	90H	76H
15.00	313H	221H	166H	120H	102H
10.00	469H	332H	249H	181H	153H
7.50	626H	443H	332H	241H	204H
6.00	782H	554H	415H	302H	255H
5.00	939H	665H	498H	362H	307H
4.29	1095H	776H	582H	423H	358H
3.75	1252H	886H	665H	483H	409H
3.33	1408H	997H	748H	544H	460H
3.00	1565H	1108H	831H	604H	511H
2.73	1721H	1219H	914H	665H	562H
2.31	2034H	1441H	1080H	786H	665H
2.00	2347H	1663H	1247H	907H	767H
1.67	2817H	1995H	1496H	1088H	921H
1.43	3286H	2328H	1746H	1269H	1074H
1.25	3756H	2660H	1995H	1451H	1228H
1.11	4226H	2993H	2245H	1632H	1381H
1.00	4695H	3326H	2494H	1814H	1535H
0.50	9391H	6652H	4989H	3628H	3070H
0.33	14087H	9978H	7483H	5442H	4605H
0.25	18782H	13304H	9978H	7256H	6140H
0.20	23478H	16630H	12472H	9071H	7675H
0.10	46956H	33261H	24945H	18142H	15351H
0.05	93913H	66522H	49891H	36284H	30702H
0.03	140870H	99783H	74837H	54427H	46053H

: Area in which sound recording is possible (when recording sound, the recording time is shorter than that shown above.)

Table of recording rate settings

Normal recording rate

Display sequence	Recording rate FPS (field/sec)
1	60.00 (Note1, 2)
2	30.00
3	20.00
4	15.00
5	10.00
6	7.50
7	6.00
8	5.00
9	4.29
10	3.75
11	3.33
12	3.00
13	2.73
14	2.31
15	2.00
16	1.67
17	1.43
18	1.25
19	1.11
20	1.00
21	0.50
22	0.33
23	0.25
24	0.20
25	0.10
26	0.05
27	0.03

Alarm recording rate

Display sequence	Recording rate FPS (field/sec)
1	30.00
2	20.00
3	15.00
4	10.00
5	7.50
6	6.00
7	5.00
8	4.29
9	3.75
10	3.33
11	3.00
12	2.73
13	2.31
14	2.00
15	1.67
16	1.43
17	1.25
18	1.11
19	1.00
20	0.50
21	0.33
22	0.25
23	0.20
24	0.10
25	0.05
26	0.03

Pre-alarm recording rate

Display sequence	Recording rate FPS (field/sec)
1	30.00
2	20.00
3	15.00
4	10.00
5	7.50
6	6.00
7	5.00
8	4.29
9	3.75
10	3.33
11	3.00
12	2.73
13	2.31
14	2.00
15	1.67
16	1.43
17	1.25
18	1.11
19	1.00

(Note 1) 30.00 FPS maximum when pre-alarm recording is set to “ON”.
(Note 2) 30.00 FPS maximum when recording only one camera; 60.00 FPS maximum when recording two or more cameras.

Program recording rate

Display sequence	Recording rate FPS (field/sec)
1 (Note1)	30
2	15
3	7.5
4	3.75
5	1.875
6	1.000
7	0.500
8	0.330
9	0.250
10	0.200
11	0.100
12	0.050
13	0.033
14	

This table indicates recording rate settings for individual cameras.

When making settings for multiple cameras, ensure that the total recording rate is within 60 FPS.

Settings are adjusted automatically to ensure that the total recording rate is within 60 FPS; accordingly, if a setting value cannot be raised, the value for a different camera must first be lowered.

* FPS stands for fields per second, the number of images that are recorded in a single second.

(Note 1) A selection cannot be made when pre-alarm recording has been set to “ON”.

Table of pre-alarm recording times

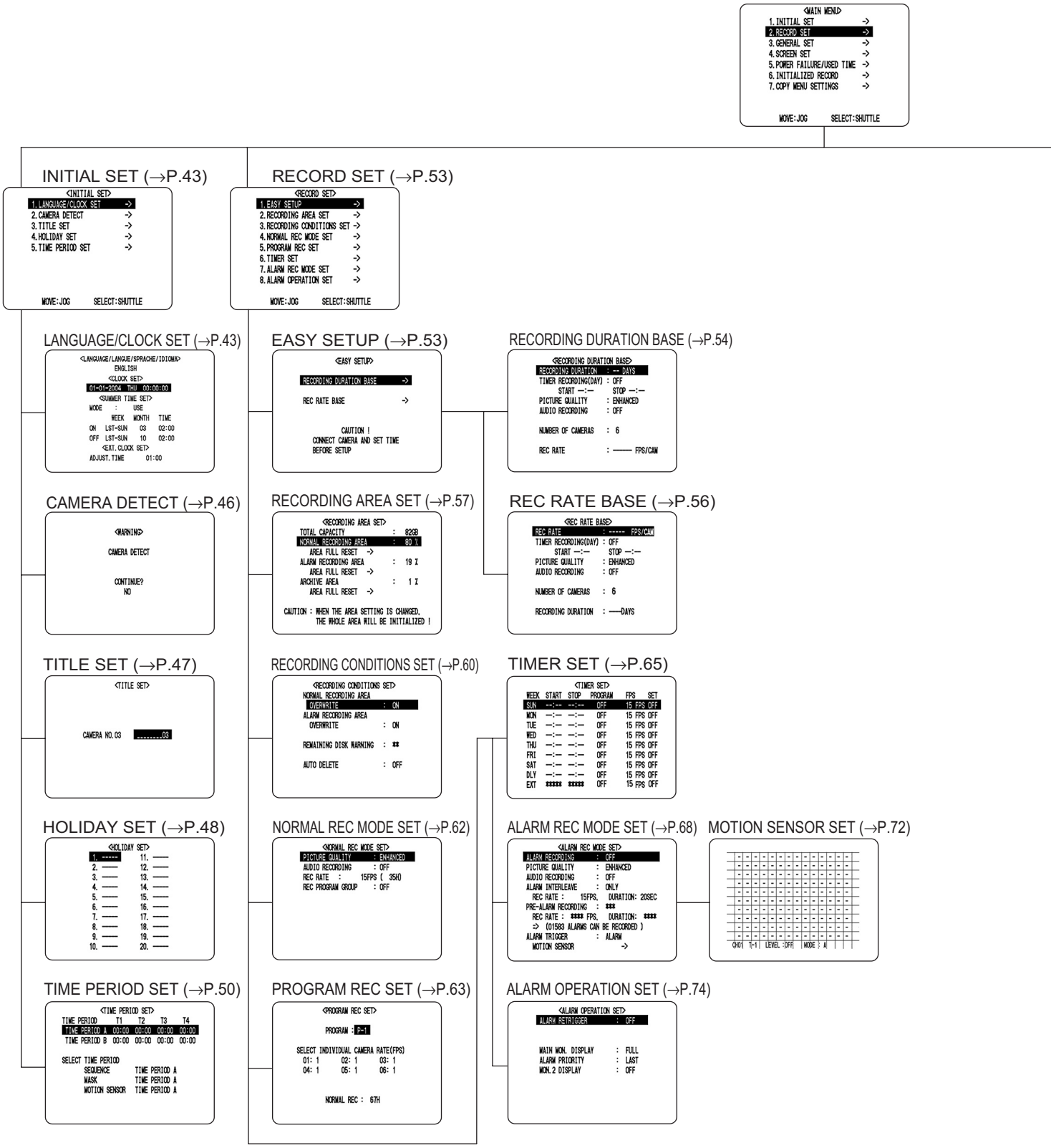
This table indicates recording times for pre-alarm recording, and it should be used when this type of recording is being carried out.

Recording rate FPS (field/sec)	Recording time (Display of time on menu screens s: seconds m: minutes)											
	3s (3s)	5s (5s)	10s (10s)	20s (20s)	40s (40s)	60s (1m)	120s (2m)	180s (3m)	240s (4m)	300s (5m)	500s (10m)	900s (15m)
30.00	○	○	○	○	○	○	○	○	○	○	○	○
20.00		○	○	○	○	○	○	○	○	○	○	○
15.00		○	○	○	○	○	○	○	○	○	○	○
10.00			○	○	○	○	○	○	○	○	○	○
7.50			○	○	○	○	○	○	○	○	○	○
6.00			○	○	○	○	○	○	○	○	○	○
5.00				○	○	○	○	○	○	○	○	○
4.29				○	○	○	○	○	○	○	○	○
3.75				○	○	○	○	○	○	○	○	○
3.33				○	○	○	○	○	○	○	○	○
3.00				○	○	○	○	○	○	○	○	○
2.73				○	○	○	○	○	○	○	○	○
2.31					○	○	○	○	○	○	○	○
2.00					○	○	○	○	○	○	○	○
1.67						○	○	○	○	○	○	○
1.43						○	○	○	○	○	○	○
1.25						○	○	○	○	○	○	○
1.11						○	○	○	○	○	○	○
1.00						○	○	○	○	○	○	○

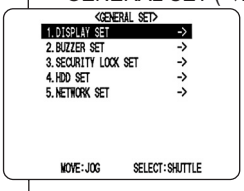
☐ Default setting, Recording rate: 15.00 FPS, Recording time: 1 min.

When setting alarm durations using a menu, settings will be restricted to those available for the selected recording rate. Similarly, when setting recording rates, the setting range will be restricted to that available for the selected duration. For example, if the alarm duration is set to 3 seconds, only 30.00 FPS will be selectable for the recording rate.
When setting fast recording rates, it may be necessary to first of all change the alarm duration setting.

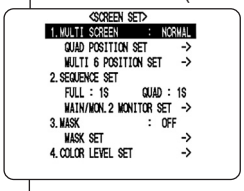
MENU SETTING SEQUENCE



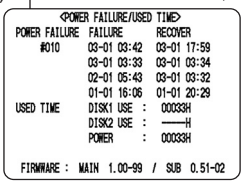
GENERAL SET (→P.76)



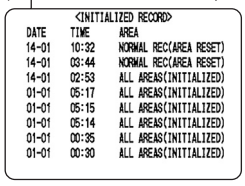
SCREEN SET (→P.87)


<SCREEN SET>
1. MULTI SCREEN : NORMAL
QUAD POSITION SET ->
MULTI 6 POSITION SET ->
2. SEQUENCE SET
FULL : 1S QUAD : 1S
MAIN/MON.2 MONITOR SET ->
3. MASK : OFF
MASK SET ->
4. COLOR LEVEL SET ->

POWER FAILURE/USED TIME (→P.95)



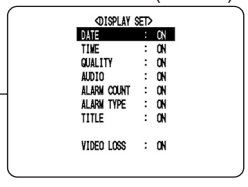
INITIALIZED RECORD (→P.96)


<INITIALIZED RECORD>
DATE TIME AREA
14-01 10:32 NORMAL REC(AREA RESET)
14-01 03:44 NORMAL REC(AREA RESET)
14-01 02:53 ALL AREAS(INITIALIZED)
01-01 05:17 ALL AREAS(INITIALIZED)
01-01 05:15 ALL AREAS(INITIALIZED)
01-01 05:14 ALL AREAS(INITIALIZED)
01-01 00:35 ALL AREAS(INITIALIZED)
01-01 00:30 ALL AREAS(INITIALIZED)

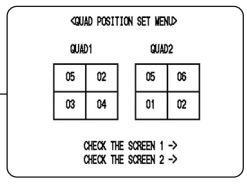
COPY MENU SETTINGS (→P.97)

<COPY MENU SETTINGS>
DVR TYPE VER. SA06-02
SAVE MENUS TO CF ->
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: NO
* IF YOU CHOOSE 'YES' OF THE ABOVE MENU,
HARD DISK WILL BE INITIALIZED !

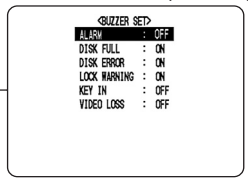
DISPLAY SET (→P.76)



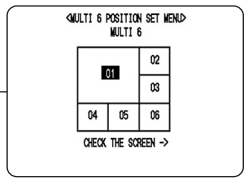
QUAD POSITION SET MENU (→P.87)



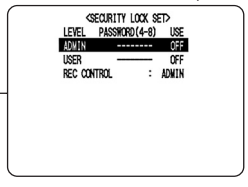
BUZZER SET (→P.78)



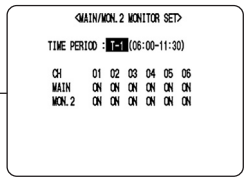
MULTI 6 POSITION SET MENU (→P.88)



SECURITY LOCK SET (→P.79)



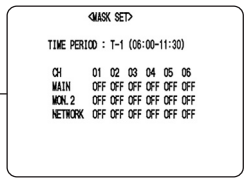
MAIN/MON2 MONITOR SET (→P.90)



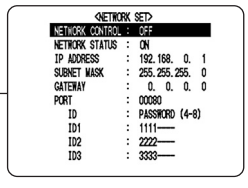
HDD SET (→P.81)

<HDD SET>
DISK1 : 82GB
DISK2 : —GB
DISK INITIALIZE ->
CAUTION : ALL RECORDING WILL BE ERASED!
MIRRORING : OFF
PLAYBACK DRIVE : ***
CAUTION : RECORDING SPEED WILL BE
LIMITED BY MIRRORING!

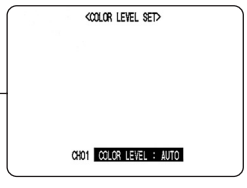
MASK SET (→P.92)


<MASK SET>
TIME PERIOD : T-1 (06:00-11:30)
CH 01 02 03 04 05 06
MAIN OFF OFF OFF OFF OFF OFF
MON.2 OFF OFF OFF OFF OFF OFF
NETWORK OFF OFF OFF OFF OFF OFF

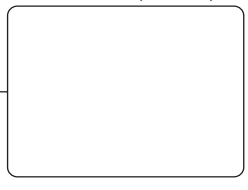
NETWORK SET (→P.82)


<NETWORK SET>
NETWORK CONTROL : OFF
NETWORK STATUS : ON
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111——
ID2 : 2222——
ID3 : 3333——

COLOR LEVEL SET (→P.93)



RS-485 SET (→P.85)



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ZOOM 23

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